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Address for correspondence:

The Editors,
Gujarat Cancer Society Research Journal
GCS Journal Office, Research Wing,
The Gujarat Cancer and Research Institute
Asarwa, Ahmedabad 380016
Gujarat, India
gcsjournal2012@gmail.com
gcsjournal2012@gcriindia.org

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Email: priti.sanghavi@gcriindia.org

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Email: mohit.sharma@gcriindia.org

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Memorial Sloan-Kettering Cancer Centre, York Avenue, New York, NY 10065, USA

Designed by: Rushi C Patel, Head, Department of Educational Graphics & Medical Photography, GCRI, Ahmedabad, India.

Specialist Palliative Care Treatment and Hematological Malignancy

Sanghavi Priti,

I/c Dy Director, Professor & Head,

Department of Palliative Medicine,

The Gujarat Cancer & Research Institute, Asarwa, Ahmedabad, Gujarat, India

Corresponding author: priti.sanghavi@gcriindia.org

 <https://orcid.org/0000-0002-5805-818X>

Palliative care is comprehensive and holistic specialized medical treatment for patients suffering from terminal illness like cancer and for their family. Though does not require either a terminal diagnosis or nearness to death; the term “Palliative care” is generally incorrectly used for terminal care or hospice care.¹ Many review articles suggest cancer patients may have following benefits by early integration of palliative care: 1) reduction in symptom due to disease burden, 2) improvement in quality-of-life and improve emotional state, 3) better-quality of survival and 4) improves care givers outcome; this also applies to those receiving active cancer care treatment. Although there are evidences for many unmet palliative care needs in hematologic cancer patients, these patients are very rarely referred for palliative care as compared to patients with solid tumors.¹⁻³ This discrepancy suggests a necessity for more education and additional efforts by hematology oncologist to adapt palliative care services in order to meet the needs of patients with hematologic malignancies.⁴

The main aim of palliative care is to improve quality-of-life of both the patient suffering from terminal illness and their family. Palliative care approach includes multidisciplinary team for symptom control, emotional support, and assist in decision making related to treatment for patients having life limiting illness and for care givers. It emphasizes on reduction of suffering of patients and carers throughout their disease trajectory, no matter the diagnosis or the stage of disease. “Palliative care” describes a philosophy of care and does not refer to a specific place or a specific stage of disease.⁴ The World Health Organization (WHO)⁴ defines palliative care as “an approach that improves the quality-of-life of patients and their families facing the problem associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial, and spiritual.” It emphasizes a holistic and comprehensive approach for prevention and treatment of the complications of the illness and its

treatment and it applies equally to patients with solid tumors and hematologic malignancies. Early palliative care should be offered in the progression of any prolonged fatal ailment, and these principles can be administered along with curative treatments meant to prolong life.³ Apart from this, a study by Manitta et al suggests that patients with hematological cancers are less likely than patients with other cancer to avail palliative treatment and those who avail the palliative care are more likely to have it at a later stage in their illness.³

Role of Palliative care specialist in oncology

Back et al,⁵ focus on three main things for primary palliative care in patients with advanced non-small-cell lung cancer in randomized controlled trial: (1) symptoms management, (2) patients’ engagement in activity to facilitate emotional adjustment with illness, accepting the illness and for treatment planning, and (3) filling the gap between the clinicians and the patient, helping the clinicians to interpret for the patient, and the patient for the oncologist.^{5,6} The article also suggests that palliative care services have unique characteristic from oncology care services, and the importance of both the clinicians is complementary in the care of patients with advanced cancer.⁷ A survey on Hematology/Oncology Fellows’ Training in Palliative Care by Buss et al shows trainees of oncology are not adequately trained in areas like management of refractory pain, imparting additional support to the conception that specialist from palliative care is specially skilled having proficiency in complex pain management and counselling beyond that which a typical hematologist/oncologist provides.⁸

Who can provide palliative care?

Primary clinicians who treat patients with cancer can provide “primary palliative care”, or “generalist palliative care” independent of specialist palliative care. Primary palliative care may include all supportive care interventions like management of chemotherapy induced nausea & vomiting,

management of infection, cancer related pain, or discussions about prognosis and understanding of prognosis.⁴ Involvement of specialist palliative care in the care of patients with hematologic malignancies does not necessitate to change the primary palliative care which is already being delivered by the hematologist-oncologists. But specialist palliative care is most beneficial in decreasing high symptom load, for management of complicated symptoms and in challenging conditions with significant ambiguity in prognostication and a comparatively poor prognosis. In patients with high symptom burden and poor prognosis, these specialists can: (1) provide additional proficiency and enable optimum symptom management, (2) provide effective communication, (3) help in facilitation of effective adjustment with disease, accepting, and scheduling treatment goals for patients having a lot of uncertainties and (4) they act as a communicating link between the clinicians and the patient, especially in circumstances where the patients do not open and converse about their doubts, worries and distresses with the primary treating oncologist.⁴

When is Palliative care required in patients with hematological malignancy?^{4,9-11}

- Patients with hematologic malignancies experience physical and psychological symptom including pain, mucositis, dyspnea, fatigue, nausea, constipation, and diarrhea, that are equivalent to or greater than that of patients with advanced solid tumors.
- In hematological malignancy, the symptoms load is significantly greater in (1) patients who are on ongoing therapy, (2) those who have poor functional state, (3) in hospitalized patients, and (4) patients with advanced stage of disease.⁹⁻¹¹
- Following patients with hematological malignancies require specialist palliative care.⁴
 - Patients having high symptom burden or intractable symptoms,
 - In patients for transplantation of allogeneic stem cell.
 - Patients having considerable emotional distress.
 - Those who have difficulty in managing or adjusting along with their disease.
 - Patients having complicated family and social challenges.
 - Those who have significant persistent misapprehension about their disease state and prognosis.
 - Patients with poor prognosis and life expectancy less than one year.

What are the fundamental clinical differences in palliative care approach for patients with hematological malignancy?

There are several reasons as mentioned below, palliative care approach is different in patient with hematological malignancy than solid tumor as suggested by Webb et al in 'Caring for patients with hematological malignancy'.¹²

- Hematological cancers generally respond more to chemotherapy as compared to solid tumors, so usual prognostic evaluations such as functional status do not relate well to various situations in malignant hematology.
- Staging in hematology is different and is mainly based on molecular/genetic features; where 'advanced disease' does not mean that it is not curable.
- Hematopoietic stem cell transplantation (HSCT) can differ considerably in both intensity and expected outcomes. Hence, palliative care approaches for this population must be customized accordingly.
- High concentrated or new therapies are common in hematologic malignancies and warrant distinctive methods to combined palliative care that are free of prognosis.
- Evaluating and controlling psychological distress is an area of unmet need in hematologic malignancies presents an opportunity for palliative care incorporation.
- Integrated palliative care at the time of hospital admission for HSCT improves outcomes in patients.
- Hematologists are more hostile with their treatments as compared to solid tumor oncologists and may often misinterpret palliative care as a substitute for hospice or end-of-life care.
- Hematologists frequently treat their patients aggressively near the end-of-life so that they may attain better results and hence struggle to anticipate who will benefit and who will not.
- Transfusion support can have noteworthy benefits of palliative care for several patients with fatal hematological malignancies but may hinder end-of-life care.
- Quality measures indicate that end-of-life outcomes become worse in patients with hematological malignancies, emphasizing a boundless necessity for integration of palliative care and hospice in this population.

Conclusion

There are many patients who have considerable requirements of palliative care services as many problems have not been answered on "how to

effectively incorporate specialist palliative care services in hematology malignancy to meet those requirements.”

Patients with hematological malignancy suffer from considerable physical and psychological symptoms that are equivalent to those who have advanced or metastatic nonhematological malignancies at all points in the course of their illness impacting their quality of life and sufferings. Integration of palliative care in the early stages forms the baseline from where the discussion about goals of care, quality of life and advance care planning can be initiated, and this is possible with the active involvement of hematologists.

Appropriate screening of symptoms at all stages of the disease progression starting from diagnosis to remission, will enable earlier intervention and improved support, including palliative care, for patients and caregivers thus impacting the outcome and quality of life simultaneously.

Acknowledgement

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Shri Madanmohan Ramanlal GCRI Luminary Oration Award - 2023

Dr Geeta Joshi

MBBS, DA, MD, PGDHHM

Chief Executive Officer, Community Oncology Centre & Hospice
The Gujarat Cancer Society, Ahmedabad
Former Dy Director, Prof & Head, Department of Palliative Medicine,
The Gujarat Cancer & Research Institute, Ahmedabad
Email: dr.geetajoshi@gmail.com



Anesthesia to Palliative Medicine: A Walk Down the Memory Lane

Abstract:

Anesthesiologists are also good pain physicians as they are well versed in handling Opioids and are skilled to perform nerve blocks for treatment of acute and chronic pain. Relieving pain and symptoms of patients suffering from life limiting illnesses is the focus of Palliative Care Physician. Of course, each specialty has its own charm and décor! My journey from anesthesiologist, being expert in CPR & saving lives of patients to helping patients of terminal illnesses, achieving dignified death is narrated in this Luminary Oration. It is also aimed to highlight efforts of all who were instrumental in establishing “Department of Palliative Medicine” with post-graduation in the subject, at Gujarat Cancer & Research Institute, the first of its kind in any Government set up in India! The talk will also throw light on present and future of this specialty in the state of Gujarat.

History of Palliative Care in Gujarat

Gujarat Cancer Society and Gujarat Cancer Research Institute are pioneers in palliative care in Gujarat. Pain clinic at GCRI since its inception, 2nd Hospice of India at Community Oncology Centre, Vasna, Ahmedabad in 1988 are few milestones in the history of Palliative Care in Gujarat. Pain and palliative care services at Guru Govindsinh Hospital, Jamnagar established by Dr P Kumar, Head, Anesthesia and Dr Agarwal, Head Radiotherapy needs a mention in history of palliative care in Gujarat.

Palliative Care OPD at GCRI

A dedicated Palliative Care OPD was started at GCRI in Oct 2010 with the support of JivDaya Foundation, Ohio, USA. Dr P M Shah, Director, GCRI, selected me for this project and gave me responsibility to develop this specialty. I took up many task, initially, as follow.

- Training of Staff
- Awareness in GCRI, in Civil Hospital Campus and amongst Cancer centres in Gujarat
- Documentation and Record Keeping
- Forming SOPs of Palliative Care Services
- Networking with other departments and Cancer Institutes in Gujarat
- Starting various courses in Palliative Care
- Started research in Palliative Care
- Strengthening Home Care Services
- Strengthening Hospice Services

My appointment as Deputy Director, GCRI in Nov 2012 gave me opportunity to spread the word about Palliative Medicine in the Department of Health & Family Welfare, GoG. First time 10 new posts (faculty & paramedical) were sanctioned by GoG to start Post graduation in Palliative Medicine.

I and my team also took up the task of establishing Palliative Care services at state level by addressing key issues as follows.

- Creating awareness about Palliative Care
- Training in Pain Management & Palliative Care
- Policy on Palliative Care Services across State of Gujarat
- Morphine Availability

Department of Palliative Medicine, GCRI worked with Department of Health & Family welfare in all these areas.

- Awareness of Palliative Care amongst Medical & Para medical professional as well as public was taken up through participation in clinical meeting, organizing workshops, distribution of pamphlets, celebration of World Hospice & Palliative Care Day, campaign through social media and print media etc.
- Number of training programs for doctors, nurses, para medical personnel were taken up with the

help of Indo American Cancer Association, Pallium India & Indian Association of Palliative Care. Many aspirant Palliative Care Physicians were trained and they started Palliative Care services in their own healthcare setup. About 10 Palliative Care services were established at various cancer centers across Gujarat between 2012 to 2017.

- Department of Palliative Medicine, GCRI became nodal institution for implementation National Program for Palliative Care (NPPC), which was announced by GOI in 2012. Medical officers & staff nurses from PHCs & CHCs were trained to implement NPPC in their districts. Following this 18 districts had NPPC implemented between 2017 to 2020 with dedicated team for this program.
- Department of Palliative Medicine, GCRI also took up initiative to implement Narcotic Drugs & Psychotropic Substance, NDPS act 2015 in Gujarat. A meeting with Health Commissioner on 11 Apr 2017, rolled out the road map for this task. Drafting of SOP for Recognized Medical Institution (RMI) & Registered Medical Practitioner (RMP) was first step towards it. The book was published by Department H&FW, GoG, which serves as guideline for getting RMI status. This has eased out the process of procuring morphine by institutions & practicing doctors. Training of inspectors of Food & Drug Control Authority (FDCA), now the licensing authority for RMI & RMP, was taken up for executing the SOPs. Now Gujarat is one of the 18 states which has NDPS Act 2015 implemented, which has enhanced morphine procurement.
- Department of Palliative Medicine got recognition for starting MD in Palliative Medicine in Apr 2018. It is the first Department in government set up to have such opportunity.

Future of Palliative Care in Gujarat

- ✓ Implementation of NPPC Program in all districts of Gujarat State. This will make the services available at the doorstep of patients.
- ✓ More number of trained professionals in Palliative Medicine will be rolled out to provide specialist Palliative Care at various levels of Healthcare.
- ✓ Morphine will be available at District level. So patients need not travel long distances to procure Morphine to relieve his/her pain.
- ✓ Robust Health & Wellness centres, with trained doctors & paramedical staff will be able to provide basic Palliative Care to all patients suffering from chronic illnesses.
- ✓ Palliative Care Services should be mandatory, for Cancer & Non-Cancer patients, in all Medical Colleges. This will cover more number of patients.
- ✓ Disease specific Specialized Palliative Care will be provided at higher centres.

I wish, in future, no patient should travel to other district to get Morphine. Their mangled wounds gets treated at Health & Wellness Centres. All medical professionals should be able to provide a dignified natural death instead of a death following medical failure!

Following retirement in 2017, my second innings started as Chief Executive Officer at Community Oncology Centre, Vasna, Ahmedabad, where I continue to carry forward the unfinished task of developing Palliative Care across the state of Gujarat. I am thankful to GCS & GCRI for this opportunity.

Shri Ramniklal J. Kinarivala Cancer Research Award- 2023

Dr. Sharmila A. Bapat

PhD, FNASc, FASc

Scientist G

National Centre for Cell Science (NCCS)

Savitribai Phule Pune University Complex

Ganeshkhind, Pune 411 007, INDIA

Email: sabapat@nccs.res.in



Two Decades of Ovarian Cancer Research - Knowledge Generated, Resources Developed and Hope Ahead

Ovarian Cancer is a highly dreaded disease. Until the turn of this century, there was hardly any fundamental research of this disease at a cellular or molecular level, while globally it was recognized as a “Silent Killer” and associated with high mortality in patients. My group was first in India to initiate research on high-grade serous ovarian cancer (HGSC), which is its most aggressive pathological subtype, that is recognized to be challenging for basic and clinical research. Over the years, we focused on understanding HGSC at the molecular, cellular and disease levels with the long-term aim of identifying novel targets for effective cancer therapy. Towards the development of resources for the Indian research community, we established several cell lines from Indian patients and protocols for xenograft and orthotopic mouse models including patient derived xenograft (PDX) models. The earliest work in our lab provided the first global evidence of the involvement of stem/progenitor cells in human ovarian tumors. We

further followed this with studying their evolution, quiescence, recruitment of primitive endothelial stem cells for neovascularization and generation of tumor heterogeneity that links with tumor dormancy, aneuploidy and minimal residual disease. Another important identification was the role of epithelial to mesenchymal transition that not only led to the understanding of metastases, but culminated in the resolution of discrete molecular classes and specific biological functions in HGSC that with further validation in clinical samples through establishment of a biomarker panel and development of standard immunohistochemistry-based operating protocols and collaboration with clinical pathologists assigned relevance to the heterogeneity of the disease. Together, the approaches developed in our lab have and continue to generate new knowledge and opportunities towards personalized cancer therapy in ovarian cancer.

Inoculation Injuries: An Analysis at GCRI

Patel Foram M¹, Christian Arpit B², Rathod Praisey M²

Infection Control Officer¹, Department of Infection Prevention and Control and Assistant Professor, Department of Microbiology; Infection Control Nurse², Department of Infection Prevention and Control, The Gujarat Cancer & Research Institute, Asarwa, Ahmednagar, Gujarat, India

Corresponding Author: foram.patel@gcriindia.org

Summary

Inoculation injuries are common occurrence in the health care profession. Amongst them, needle stick injuries are highest in all health care workers. Needle stick injuries are often reality for staff who regularly use needles, like nurses and lab workers but many go unreported. This study was carried out by Infection prevention and control department of GCRI retrospectively. All inoculation injuries that occurred from January 2018 to December 2022 to all categories of hospital staff like Doctors, nurses, technicians and housekeeping staffs were included in study. From 2018 to 2022, total 86 inoculation injuries were reported in GCRI. Out of total 86 injuries, 81(94%) were needle stick injuries and only 5(6%) were splash of blood/body fluids. The number of reported Inoculation injuries that occurred per year ranged from 8-29. Inoculation injuries were highest in nursing staff (44%) followed by housekeeping staff (24%). Inoculation injuries were commonest while discarding sharps (25.5%), followed by invasive procedures (17.4%). Inoculation injuries are unavoidable incidents in all health care settings. Continuous training on sharp education, universal precaution, disposal of Sharps can reduce the number of incidents in health care settings. It is responsibility of Infection prevention and control department to set a multi-variate approach to protect the staff against inoculation injuries.

Keywords: Inoculation injuries, needle stick, health care workers

Aim: To know the prevalence of inoculation injuries and factors influencing it and also management of muco-cutaneous and percutaneous injuries in all health care workers of GCRI.

Introduction

Inoculation injuries are a very common occurrence in the health care settings. But unfortunately many of them go unreported.¹

All institutions must focus on decreasing the incidence of inoculation injuries and also reducing the rate of blood born transmitted diseases depending on the risk of transmission.

Amongst different inoculation injuries, needle stick injuries are highest in all health care workers.¹ In order to decrease the injuries, it is important that all individuals of hospital should be well trained about all exposure risk and educated regarding appropriate management.

There are three most common primary pathogens which are transmitted through inoculation injuries.²⁻⁵

Sr. No.	Name of Viruses	Risk of Infection	Factors which increased risk:
1	Human Immunodeficiency Virus (HIV)	•approximately 0.3 % without proper PEP (post exposure prophylaxis). ²	•Deep wound •Visible blood on the sharp •Patient with terminal HIV •Needle used in the vein or artery of the patient. ³
2	Hepatitis B Virus (HBV)	•If the patient is HbeAg-positive, which indicates active multiplication of virus then the risk of hepatitis is 3-31%. ^{3,4} •If the source is Hbe Ag-negative, the risk is less as compared to Hbe Ag positive, that is around 1-6%. ³	•Depends on the infectivity markers of the source. ³
3	Hepatitis C Virus (HCV)	•approximately 1.8%. ⁵	•No post exposure prophylaxis is available

- While there is active (potent vaccine) and specific passive (Hepatitis B immunoglobulin, HBIG) immunization available for HBV infection, such immunization is not available for HIV, HCV infections. Therefore 'High standard of handling' should be used while in contact with all invasive procedures.
- Although HBV immunization gives protection, we should always follow good Infection Prevention and Control practices, as vaccine gives protection in 80-90% of vaccinated individuals. There may be non-responders also.³
- Titer for Antibody against HBV should be checked after three months of completion of full course. All non-responder individuals and individuals with less than 10 mIU/ml titer value should be considered for a repeat course.³

What to do after any Inoculation injury?

1. Do not Panic.
2. Don't suck the wound.
3. Don't scrub or squeeze the wound.
4. Allow the blood to trickle/ flow under running tap water & wash with soap.
5. Dry and cover with water proof dressing.
6. Inform immediately to Head Nurse and Infection Control Nurse to fill up the NSI form and for further action.
7. If the needle is contaminated with patient positive for HIV/ HbsAg/ HCV or patient's status is unknown then it is required to take a prophylactic dose its available in Super Room and later to go to Anti-Retroviral Therapy centre, Civil Hospital along with the Needle stick injury form within 24 hrs of the injury.
8. Counselling by Infection Control Nurse.
9. All report forms to be sent to the Infection Prevention and Control Department
10. Blood is collected from victim for – HIV, HCV, HBV, Anti HBs titer
11. Blood is collected from the patient for – HIV, HCV, HBV
12. Further follow up of serological testing of the victim should be done till six months

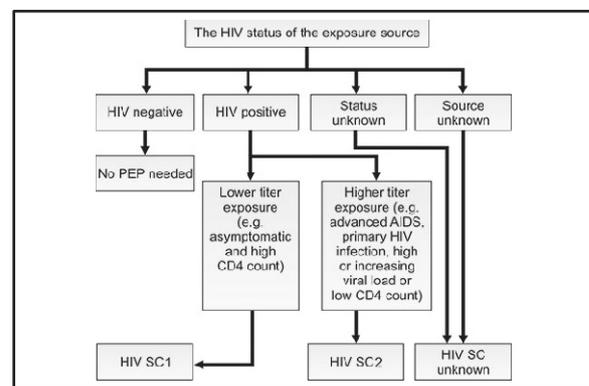
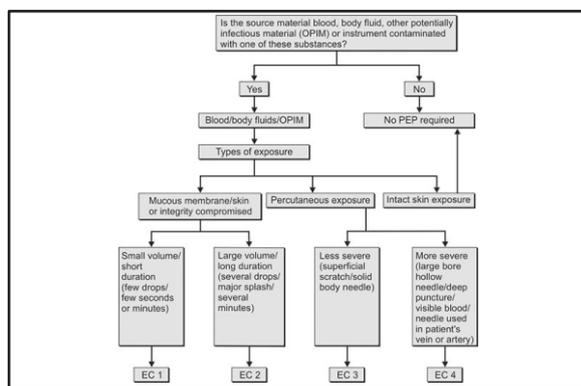
Post exposure prophylaxis (PEP) for HIV / HBsAg/ HCV2

- HIV: When the source is HIV positive, take a prophylactic dose within an hour and its available

in Super Room and later to go to Anti-Retroviral Therapy center for further PEP.

- The employee is counseled by Infection Control Nurse regarding the risk of infection and precautions to be observed.
- Clinical and serological evaluation of the employee is offered.
- The employee is advised to report any symptoms such as fever, lymphadenopathy, rash, profound fatigue, or persistent headache that occurs within 12 weeks after exposure.
- Initially seronegative employees should be tested at 3 and 6 months after exposure.
- Additional counselling should be arranged if necessary. The PEP should be taken on the available NACO guideline which is based on exposure to HIV and HIV status of the source from whom exposure/infection has occurred. [Figure 1]⁷

1. **HBV:** The PEP is mainly based on HBV status of the source and immunity status of victim.¹
 - If, victim is unvaccinated than vaccination should be initiated inspite of the status of source.
 - If the vaccination status of the victim is unknown, then tested for anti-HBs titre before giving PEP.
 - If a victim has a documented anti-Hbs titer more than 10 mIU/ml, than no PEP is required.
2. **HCV:** No PEP is available till date for victims exposed to HCV positive source but follow-up for HCV RNA is recommended by few studies



PEP - HIV TREATMENT NACO		
Exposure Code (EC)	Source Code (SC)	Treatment
EC 1	SC 1	PEP may be required
EC 1	SC 2	Consider basic regime
EC 2	SC 1	Recommend Basic regime (most exposures in this category)
EC 2	SC 2	Recommend Expanded regime
EC 3	SC 1 / 2	Recommend Expanded regime
2 / 3	Unknown	Consider basic regime

Revised ARV regimen for Post Exposure Prophylaxis for HIV infection		
Exposed person	Preferred regimen	Alternate regimen (if the preferred regimen is not available or contraindicated)
Adolescents and Adults (>10 years of age and age > 30 kg weight)	Tenofovir (300 mg) + Lamivudine (300 mg) + Dolutegravir (50 mg) (FDC - one tablet OD)	Tenofovir (300 mg) + Lamivudine (300 mg) (FDC - one tablet OD) Lopinavir (200mg) /ritonavir (50 mg)(two tablets BD) OR Tenofovir (300 mg) + lamivudine(300 mg) + Efavirenz (600 mg) (FDC - one tablet OD)
Children (> 6 years and > 20 kg weight)	Zidovudine + lamivudine (dosage as per weight band) + Dolutegravir (50 mg) (one tablet OD)	If Hb < 9 gm/dl Abacavir + Lamivudin (dosage as per weight band) + Dolutegravir (50 mg) (one tablet OD)
Children (<6 years old or < 20kg weight)	Zidovudine + lamivudine + lopinavir / ritonavir (dosage as per weight band)	If Hb < 9 gm/dl Abacavir + Lamivudin + Lopinavir / Ritonavir (dosage as per weight band)

Figure1: NACO guideline based on exposure to HIV and HIV status of the source

We studied the frequency of inoculation injuries, types of injuries and post exposure prophylaxis in all groups of health care workers of GCRI.

Materials and Method

This study was carried out by Infection prevention and control department of GCRI retrospectively. All inoculation injuries that occurred during a period 5 years between January 2018 to December 2022 were included in this study. All categories of hospital staff like doctors, nurses, technicians and housekeeping staffs were included in study.

As a part of Employment risk reduction Policy, Inoculation injury (NSI - needle stick injury) form was filled, if any inoculation injury happened in hospital immediately by Infection control nurse.

We obtained following details from the filled Inoculation injury form:

- Demographic details of staff and patient
- Information about injury like: date, time, type of sharp etc.
- Vaccination status of staff
- Patient status of HIV, HBV and HCV
- History of incident
- Action taken after injury
- Details of PEP, if given
- Results of follow-up sample

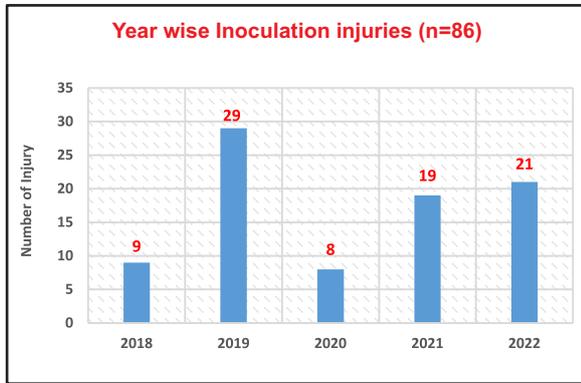


Figure 2: Year wise inoculation injuries

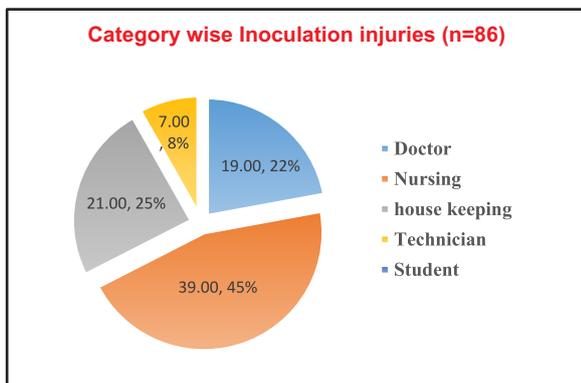


Figure 3: Inoculation injuries in different categories of staff

All data were entered and analyzed using SPSS 16. Exposure code of Injury is defined as per standard guideline.

Results

Over a period of five years (2018 to 2022), total of 86 inoculation injuries were reported in GCRI. Out of total 86 injuries, 81(94%) were needle stick injuries and only 5 (6%) were splash of blood/body fluids.

Figure 2 shows year wise inoculation injuries. Inoculation injuries in different categories of staff are mentioned in Figure 3.

Figure 4 shows the type of sharp which were involved in Inoculation injuries, like hypodermic needle, viggio stylet, scalpel, suture needle etc.

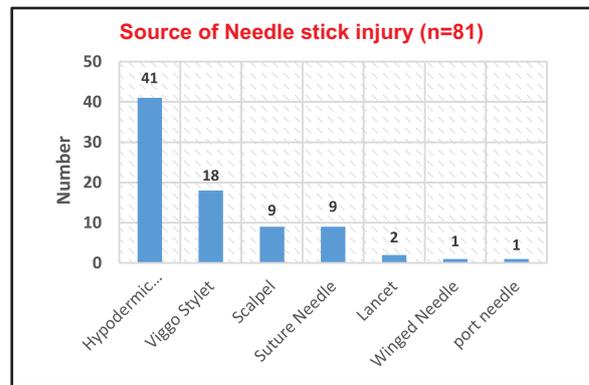


Figure 4: Source of needle stick injury

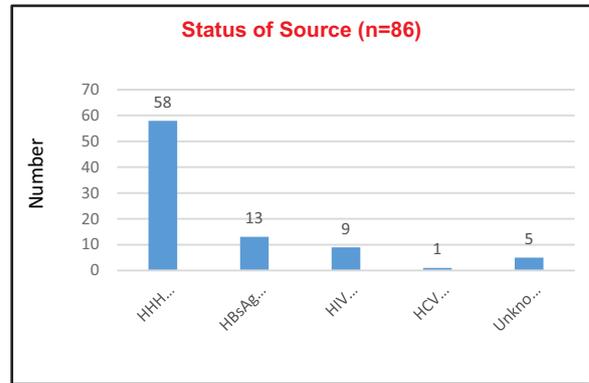


Figure 5: HIV, HBV and HCV (HHH) status of source

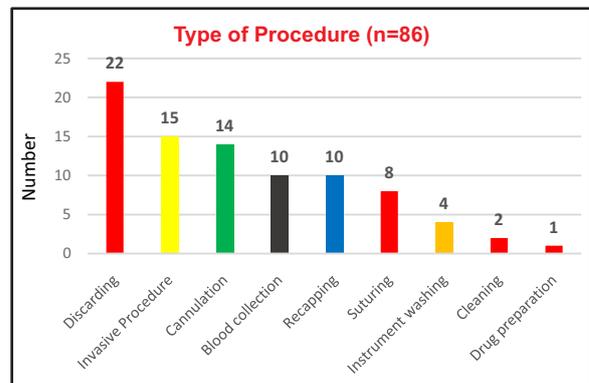


Figure 6: Inoculation injuries occurred during different procedures

HIV, HBV and HCV (HHH) status of source are shown in Figure 5.

Inoculation injuries occurred during different procedures like; discarding, invasive procedures, cannulation, blood collection etc. this is shown in Figure 6.

Discussion and Conclusion

The number of Reported Inoculation injuries that occurred per year during last five years (2018-2022) ranged from 8 – 29. Study by Sharma et al., from Delhi reported 0-20 injuries in their study.⁶

Amongst the different categories of staff, injuries were highest in nursing staff (38/86, 44%) followed by housekeeping staff (21/86, 24%). Study by Sharma et al. has also shown that Nursing staff are more prone to inoculation injuries in his study. (42/322, 13.4%).⁶

Out of total 86 injuries, 58 (67%) patients were negative, 13 (15%) were HBV positive, 09 (10%) were reactive to HIV, one patient was reactive to HCV and 05 (5.8%) injuries were from unknown sources.

- Following Injury by HBV positive source, out of 13 staff, 12 were well protected. only one staff was non-vaccinated. HBIG and first dose of HBV vaccine was given to that staff.
- After injury from HIV positive source (N=9), one-month ART as per NACO guideline were given to all nine staff.
- All 86 staffs were followed for six months. Follow up blood samples were taken at the interval of 0, 3, and 6 months for testing of HIV, HBV and HCV. None of them were found to be positive.

Inoculation injuries occurred highest while discarding sharps (22/86, 25.5%), followed by invasive procedures (15/86, 17.4%). It is also common during cannulation, re-capping of needle and suturing. Khursheed et al also observed that more injuries occurred during disposal of sharps (43%).⁸

Comment

Inoculation injuries are unavoidable incidents in all health care settings. In addition to that it may include psychological trauma to the staff. The introduction of safety devices may decrease the occurrence of this type of incidents.

Multi-variate approaches are required to prevent the staff against inoculation injuries. Like; training on

- Standard sharp education
- Universal precaution
- Disposal of Sharps
- Bio-medical waste management

It is responsibility of Infection prevention and control department to set up a proper surveillance mechanism and proper facility for immediate response and post exposure prophylaxis of all inoculation injury.

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Meditation: A Perception to Prevent the Chronic Adverse Health Effects of Hectic Busy Life of Women

Mandalia Toral

Chief Editor, Gujarat Cancer Society Research Journal

Research Assistant, Molecular Diagnostics and Research Lab II, Cancer Biology Department

The Gujarat Cancer & Research Institute, Asarwa, Ahmedabad, Gujarat, India

Corresponding Author: toral.kobawala@gcriindia.org

 <https://orcid.org/0000-0002-3495-1600>

As defined by the World Health Organization, 'Health is not merely the absence of disease or illness but, it is an ample state of physical, mental and social well-being.' It is recognized to be an execution concerning maintenance of equilibrium between physical, mental, and social well-being. The popular term wellness is used to denote this optimal state of health.

Due to an increase in competition and adoption of modern lifestyle, stress has become an inevitable part of the individual's life. This is especially true for working women who are the building blocks of a society. They play a vital role for the adequate economic and social development of the nation. Women are making their place in diversified fields such as in the top management in a corporate, lawyer, teacher, doctor etc. These women, however, have to maintain a dual responsibility of managing household chores and handling work responsibilities. It is even more difficult for them to strike a balance between their working and personal lives; thus they are likely to experience greater levels of stress as compared to the males. Studies also suggest that women have a greater chance of experiencing symptoms like fatigue, irritability and depression than men.

Women are stereotypically labelled as multitaskers and often find themselves with overwhelming workloads, which can seem impossible to go through. Most Indian women are conditioned to give their hundred percent both at home and at work and this pressure sometimes generates a feeling of guilt in them.

Long time work pressure may have a vast negative impact on the physical and mental health. Under pressure, the work efficiency is also greatly reduced. It also reduces the throughput of society. Therefore, it has become essential to find a way to deal with this pressure and stress in women's life.

Many women in our civilization put themselves and their desires last on their list of priorities. Most women learn to multitask out of

necessity. However anxious or discouraged they may feel but yet, they sense that their children, family and domestic duties come first before they can consider time for their own pursuits. This is a mistake because if she doesn't take care of herself and value her own needs, it will lessen her ability to care for the people she loves.

If left unchecked, these feelings of stress and frustration may contribute to chronic adverse health effects such as anxiety and depression which can weigh down our mind, keep us from taking action and thwart our motivation. Hence, ignoring this stress and pressure can lead to a wide array of health issues – both physical and psychological. It can also lead to burnout in the workplace.

Amongst the various different techniques that can be adopted to stay fit and healthy in this fast growing world full of stress, '**Meditation**' is a great way of relaxing the entire body and mind and hence maintain a balance between professional and personal life. Daily meditation helps a person to become more resilient to the stressors of everyday life. It can produce a deep state of relaxation and tranquil mind. It gives a feeling of calmness, peace and balance that can benefit both our physical and emotional well-being - our overall health. Research has found many reasons why one should start meditating on a daily basis:

Meditation *stimulates areas of the brain* associated with memory, concentration, learning and emotional regulation. Meditation is like a workout for our brain. Overtime it improves the overall brain health and mental capacity. It increases the capacity to concentrate and also boosts the attention to a detailed level of accuracy.

Meditation can *encourage creative thinking*. It helps to separate our emotions from work so that we can think more clearly and develop new ideas. Thus, we can perform better at work. It increases our focus and attention and improves our ability to multitask and gives a huge productivity boost.

It is a powerful aid in *breaking the negative thought loops* and leave our mind free to focus on

other important things. It allows to recognize and tame our negative emotions and achieve a kind of mental equilibrium. Through meditation, we can not only observe and accept our own emotions but, also can understand how those around us are feeling. It also increases our patience and tolerance power. This enables us to handle the conflicts in any relationship in a better way and helps to become attuned communicator. Meditation enables us become more conscious and more determined about our actions. It imparts us how to respond, rather than react, to situations in our life.

Meditation can be a good way to *reduce high blood pressure* along with medical treatment, healthy diet and exercise. It may not directly lower the blood pressure but, the practise helps to fight stress and anxiety which are both considered to be the culprits of high blood pressure. Meditation lessens the responsiveness of body to stress related hormones and improves our stress management skills by relaxing us. This ultimately helps us to deal with the chronic feeling of stress and alleviate the risk of serious illness like heart diseases, arthritis, asthma, skin problems and even cancer. Moreover, meditation has powerful anti-anxiety benefits as it helps one to remain calm and allows to break down the racing thoughts that anxiety brings. Ultimately, meditation also aids in treating the symptoms of depression or lowers its risk by helping to fight with situations of stress and anxiety, which are both triggers for depression.

Regular meditation has proven to help *boost our immune system*. Studies have demonstrated higher counts of antibodies in the blood of those who meditate. Researchers have observed a link between meditation and pain relief and they recommend regular meditation in addition to medical treatments for chronic pain and disorders.

Finally, to conclude with, the current Indian era witnesses every woman making extra efforts in order to deal with her day-to-day duties and responsibilities. Since women have to function at manifold levels, they tend to become tired, annoyed or exhausted after an extended period of time. Herein it can be specified that there exists a remedy for tension, stress and worries and that is termed as meditation for women.

Meditation plays a major role to pacify women, to release the unwanted stress and to focus upon the positive things in life. In addition, benefits of meditation also accompany a lady to improve her effort, her attention and concentration – the three fundamental elements that are essential when steering daily duties, both in a personal and professional domain. Women can actually overcome daily tribulations and manage to move up the ladder of success with the help of relaxation techniques and affirmative thinking. Previously believed to serve as the exclusive domain of monks and spiritual seekers, meditation is gradually being studied by researchers and recommended by physicians as a means to help woman to equilibrate and manage the multifaceted layers of life.

“In the midst of movement and chaos, keep stillness inside of you.”

*

***“We can’t always change what’s happening around us,
but we can change what happens within us.”***

-Andy Puddicombe

Vulvar Leiomyoma: A Rare Clinical Entity

Kumari Asha¹, Parekh Chetana², Tyagi Vishakha³, Patel Shilpa⁴, Arora Ruchi², Padival Ashika³
Fellow¹, Professor², MCH Resident³, Professor and Head⁴

Department of Gynecological Oncology,

The Gujarat Cancer & Research Institute, Ahmedabad, Gujarat, India

Corresponding Author: shilpa.patel@gcriindia.org

 ²<https://orcid.org/0000-0003-4811-5889>

 ⁴<https://orcid.org/0000-0002-3090-5455>

Summary

Among all benign tumors, leiomyomas which occur most common in uterus, account for about 3.8%. Vulvar localization of leiomyomas is very rare with only 160 cases reported so far. Here we present a case of vulvar leiomyoma and discuss the diagnosis and management of this disease. A 36-year-old female patient with no medical history, had a 11 x 8 cm mass in the left labia majora causing a sensation of heaviness at the perineum which was aggravated by weight lifting. She underwent a complete surgical excision of the mass. On pathological examination it was diagnosed as a leiomyoma. Vulvar leiomyoma is a rare benign tumor. The diagnosis is made only postoperatively after resection of the mass. The treatment is essentially based on total excision of the mass with a good prognosis.

Keywords: Vulva, leiomyoma

Introduction

Tumors which involve vulva can be benign, premalignant, and malignant tumors. Among soft tissue tumors, leiomyomas account for about 3.8%.¹ The tumors are supposed to arise from smooth muscle present in blood vessels, erectile tissue or remnant of the round ligament in the labia majora.² Commonest site of its occurrence is the uterus.³ Bartholin's cyst is the most common differential diagnosis for unilateral vulvar swelling in the reproductive age women,⁴ whereas leiomyomas of the vulva are particularly rare. Other differential diagnosis are unilateral inguinal hernia, fibroma, lymphangioma and angiofibrosarcoma. In this case report, we are presenting a case of vulvar leiomyoma with regard to its diagnosis and management.

Case Presentation

A 36-year-old female patient, regularly menstruating para 3 live birth 3, with no significant medical history, presented with vulvar mass since 2 months with a sensation of heaviness at the perineum, aggravated by weight lifting. Patient had no history of fever, abdominal symptoms, vaginal discharge. On vulvar examination, there was a firm mass measuring 11 x 8cm located on the left labia majora. On Per Speculum, cervix, vagina were healthy, on bimanual examination, uterus was normal in size [Figure 1]. On MRI, the mass appeared as well defined, encapsulated, with peripheral hyperintensity and

central hypointensity on T2w image. The lesion showed intense heterogenous post contrast enhancement, with round ligament appearing bulky with multiple prominent vessels. On ultrasound of pelvis and groin there was no prominent inguinal lymphadenopathy and no evidence of bowel loops in the mass. Preoperatively provisional diagnosis was angiofibrosarcoma as suggested by MRI. The patient had a surgical excision of the vulvar mass under spinal anesthesia. Histopathology revealed a proliferation of smooth muscle fibers without atypical mitosis, necrosis and pleomorphism. All the cutaneous margins were free of tumor. Morphological analysis concluded it to be a vulvar leiomyoma. No IHC was kept as histopathology clearly revealed smooth muscle tumor.

Discussion

Leiomyomas are smooth muscle benign tumors. Uterus is the most common site, while other ectopic sites being ovaries, urethra, vulva, bladder, peritoneum and retroperitoneum.⁵ Till now only 160 cases have been reported which support its rarity.¹ Twenty-five cases were reported by Nielsen et al.⁶ In most of the cases its diagnosis is made postoperatively. Preoperatively, it can be confused with a Bartholin's cyst.¹ Some features that support the diagnosis Bartholin cyst are everted labia minora and cystic in consistency of the swelling; however, finding inverted labia minora and firm in consistency of swelling support the diagnosis of vulvar leiomyoma.⁴ There are various presenting symptoms, most common being, painless mass, but can present with pain, erythema or itching.⁶

A study on 95 patients with cutaneous leiomyomas, by Kurdi et al, only 4.2% has vulvar involvement.¹ Leiomyoma of the vulva can occur at any age.⁷ In a study by Nielsen et al of 25 patients with vulvar leiomyoma, the mean age of presentation was 37 years,⁶ whereas the mean age in a study by Katenkamp et al on 21 patients, was 41 years.⁷ Indexed patient was 36 years of age with a tumor diameter being 7 x 6 x 5 cm. On histopathological

examination, vulvar leiomyomas are well circumscribed tumors made up of spindle cells in a myxoid stroma without cytologic atypia and are positive for ER PR on immunohistochemistry. Due to enhanced soft tissue differentiation, MRI is considered as the most appropriate imaging tool to differentiate between a malignant and benign tumor.⁸ Myomas appear as hypointense to isointense on both T1 and T2w images, with homogenous enhancement with contrast.⁸ In our case, MRI showed a well-defined, encapsulated lesion with central hypointensity and peripheral hyperintensity on T2w image. The lesion showed intense heterogenous post contrast enhancement, with the round ligament appearing bulky with multiple prominent vessels. Differential diagnosis in this case was Bartholin cyst, angiomyolipofibroma and fibroma.

Surgical excision is the mainstay in the management of a vulvar leiomyoma, with final diagnosis being after histopathological confirmation.⁴ Only 1 out of 25 patients had recurrence of the vulvar leiomyoma after 10 years in the study by Nielsen et al,⁶ hence close long term follow-up is advisable. There is no role of adjuvant therapy as it is benign condition, all margins were negative.

Conclusion

The diagnosis of a vulvar leiomyoma is often made only after the histopathological confirmation of the resected mass. Ultrasound or MRI may aid in the diagnosis of these extrauterine leiomyomas, which present as a rare entity. Bartholin's cyst, lymphangioma, fibroma, sarcoma, or neurogenic tumor should be considered as the differential diagnosis when treating such tumors. The mainstay of the treatment include surgical excision and long-term follow up.

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Figure 1: A to D: Intraoperative images of the vulvar fibroid. Notice the pedunculated mass with lax skin wall. E: vulvar mass with covering skin.

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Case of Dysgerminoma with Partial Deletion of X Chromosome

Vali Faraz¹, Dave Pariseema^{2a}, Patel Bijal^{2b}

Fellow¹, Professor^{2a, b}

Department of Gynaecology Oncology,

The Gujarat Cancer & Research Institute, Asarwa, Ahmednagar, Gujarat, India

Corresponding author: pariseema.dave@gcriindia.org

 ^{2a}<https://orcid.org/0000-0003-3300-4414>

 ^{2b}<https://orcid.org/0000-0002-5446-1959>

Summary

A 22 year old female presented with pain and distension of abdomen. She had not attained menarche and was having primary infertility. She was short stature. Her breasts were under developed but axillary and pubic hair development was normal. On examination there was huge, hard, fixed mass in lower abdomen with restricted mobility. On imaging, there was solid irregular mass in pelvis with hypoplastic uterus. LDH and beta hCG levels were raised. Biopsy of the mass with immunohistochemistry revealed dysgerminoma. Karyotype revealed 46 X, del X (p21), absence of Y component. There were no stigmata of Turner syndrome. On endocrine evaluation she had hypergonadotropic hypogonadism and no autoimmune disorders. Because of the mass being unresectable, she underwent one cycle chemotherapy followed by laparotomy. There was right ovarian mass and other ovary was streak with small uterus, so she underwent hysterectomy and bilateral salpingoophorectomy with unilateral pelvic lymphadenectomy. Post surgery she was given three cycles of chemotherapy and was kept on estrogen replacement therapy. Patient is on 3 monthly follow up. This case highlights the importance of doing karyotyping in case of premenarcheal females with pelvic mass.

Keywords: Dysgerminoma, Turner syndrome, karyotype

Introduction

Approximately 5% of dysgerminomas are diagnosed in women (phenotypic) with dysgenetic gonads.¹⁻³ Here we present a case of dysgerminoma in female with partial deletion of X chromosome.

Case report

A 22 year old female from lower socioeconomic class presented to our hospital with abdominal distension and pain for ten days. She had not attained menarche. She was married for 2 years and was unable to conceive. On general examination height was 146 cm (Adjusted mid parental height= $(F-13) + M / 2 = 156.5 \pm 8.5$, F- father's height, M-mother's height) which was less than 3rd centile. Thus, patient was short stature. Bilateral breasts were underdeveloped (Tanner stage 3) while axillary and pubic hair were well developed (Tanner stage 4). On abdominal examination there was a single, hard, irregular mass felt in lower abdomen up to umbilicus with restricted mobility, no ascites; on vaginal examination vaginal length was normal and cervix was felt higher up; on rectal examination there was a

hard, fixed, irregular mass dissecting rectovaginal septum and compressing rectum, rectal mucosa was free, uterus was not felt separately.

Transabdominal ultrasonography (USG) and MRI pelvis revealed 15 x 10 cm large multilobulated solid lesion in pelvis encasing left lower ureter with proximal hydroureter and hydronephrosis. Hypoplastic uterus like structure was seen. On contrast enhanced CT (CECT) scan there was no lymphadenopathy and urinary tract was normal. LDH and beta hCG were raised (1844 U/l and 35 IU/L respectively). AFP was normal (1.36 ng/ml). Biopsy from the lesion was done because the mass was unresectable and it revealed malignant germ cell tumor. Immunohistochemistry (PLAP +, OCT3/4 +, C-kit/CD117 +, CD30 -) confirmed Dysgerminoma. Karyotype report was 46 X, del X (p21), absence of Y component, although mosaicism couldn't be ruled out [Figure 1]. On endocrine evaluation, FSH and LH were raised (134 mIU/ml and 68 mIU/ml respectively), estradiol and Anti-mullerian hormone were reduced (<5 pg/ml and <0.01 respectively) while prolactin and TSH were normal. 2D echo was done to rule out coarctation of aorta. There was no skeletal anomaly.

In multidisciplinary tumor board discussion it was decided to administer one cycle neoadjuvant chemotherapy followed by evaluation for surgery because the mass was unresectable. After

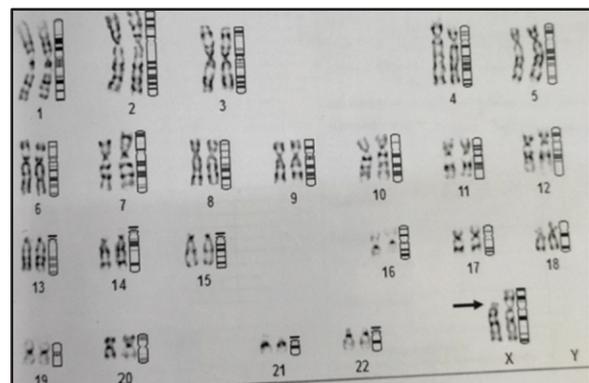
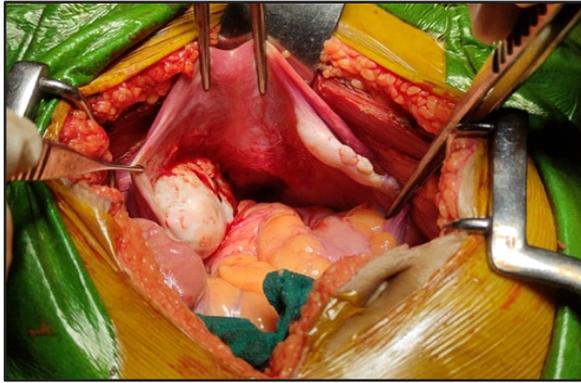


Figure 1: Karyotype: Deletion of short arm of chromosome X



(a) Left sided ovarian mass and right sided streak ovary



(b) Right sided streak ovary



(c) Left ovarian mass



(d) Hypoplastic uterus

Figure 2: Intraoperative findings

one cycle of chemotherapy BEP (Bleomycin, Etoposide, Ciplatin) patient was re-evaluated. On examination size of the mass was reduced. CECT scan showed 10 x 9 cm solid mass in pelvis with loss of fat plane with sigmoid, no abnormality in bilateral lungs. LDH and beta hCG levels were reduced (190 U/l and 4.5 IU/L respectively). As there was reduction in size of mass and LDH and beta hCG levels she underwent laparotomy. Patient and her husband were counselled preoperatively regarding need for removal of another ovary and uterus because there is 10 - 15 % rate of bilaterality in dysgerminoma,⁴ ovaries were non-functional and uterus was hypoplastic. Intraoperative findings: no ascites, uterus was small, 5x4cm left ovarian mass adherent in pouch of douglas with sigmoid colon and posterior wall of uterus, right ovary was atrophic with nodular growth over it, bilateral fallopian tubes were normal, no disease elsewhere in abdomen [Figure 2]. She underwent removal of left ovarian mass, right salpingo oophorectomy, hysterectomy, infracolic omentectomy and left sided pelvic lymphadenectomy. Her histopathology report revealed microscopic foci of residual dysgerminoma in left ovary while right ovary was streak gonad and no disease in omentum and lymphnodes.

Patient was discharged on 5th post-operative day. Patient received three cycles of BEP chemotherapy postoperatively at 21 days intervals.

She was started on estrogen replacement therapy. She is on three monthly follow up with clinical examination, USG and LDH for two years.

Discussion

There are various abnormalities of X chromosome e.g. complete deletion, partial deletion, ring X and isochromosome of the long arm of the X chromosome (i[Xq]). Our patient is a case of partial deletion of X chromosome, specifically short arm p21. The effective monosomy created by the deletion of Xp is thought to lead to some of the phenotypic features of Turner syndrome.⁵ The short stature homeobox (SHOX) gene is located in the distal region of Xp and its deletion is directly associated with short stature and skeletal deformities. Deletion of short arm of X chromosome is associated with decreased chances of menstruation and fertility. Our patient had short stature, underdeveloped breasts, primary amenorrhea and infertility. She also had streak ovary and hypoplastic uterus. There were no other features of Turner syndrome.

Dysgerminoma is the most common (i.e. 30 – 40 %) malignant germ cell tumor and 75 % occur between 10 to 30 years of age.^{1,6,7} It can be associated with pure gonadal dysgenesis, mixed gonadal dysgenesis or androgen insensitivity syndrome. Presence of Y chromosome increases the risk of

development of gonadoblastoma and dysgerminoma. However, in one study involving 29 patients of Turner syndrome with Y chromosome, there was not a single case of gonadoblastoma which suggests that there may be lower risk of ovarian germ cell tumors than previously estimated.⁸ The presence of Y material was ruled out in our patient.

There are few reports of dysgerminoma developing in patients with partial monosomy X and dysgenetic gonads.⁹ Therefore, for the development of germ cell tumor it is not mandatory to have monosomy X.

In most of the cases of gonadal dysgenesis, dysgerminomas arise in gonadoblastomas. More than 50% gonadoblastoma in gonadal dysgenesis will develop into ovarian malignancies if not excised.³

However, in our patient there was no evidence of gonadoblastoma in the excised specimen.

Thus, our study highlights the importance of doing karyotype in premenarcheal patients with a pelvic mass.

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Spindle Epithelial Tumor with Thymus - Like Differentiation (SETTLE): Case Report

Rastogi Akriti¹, Banala K Tarun², Pandya Shivam², Mokhasanavisu V J Prasanth¹
Fellow¹, Assistant Professor²

Department of Surgical Oncology,

The Gujarat Cancer & Research Institute, Asarwa, Ahmedabad, Gujarat, India

Corresponding Author: shivam.pandya@gcriindia.org

 <https://orcid.org/0000-0003-1359-8059>

Summary

Spindle epithelial tumor with thymus-like differentiation (SETTLE) is a rare tumor with slowly progressive disease course with late metastases. Metastases develops in 20% patients but most patients are diagnosed when tumor is still localised. Surgery is the gold standard treatment for SETTLE. Limited data is available regarding efficacy of chemotherapy and radiotherapy. There have been less than 50 cases published in the English literature. We report a case of a 13-year-old male patient with neck metastasis. The patient presented asymptomatic right neck mass. He gave history of midline neck swelling since birth for which he underwent left hemithyroidectomy elsewhere and later on developed right neck swelling. He underwent right neck dissection at our institute and was followed up monthly thereafter.

Keywords: Neck swelling, spindle epithelial tumor, thymus like differentiation

Introduction

Some of the rare tumors occurring in the neck and the thyroid gland, show histologic resemblance to thymus and mediastinal thymomas.¹

This type of tumors were classified into following groups by Chan and Rosai: ectopic hamartomatous thymoma, ectopic cervical thymoma, spindle epithelial tumors with thymic-like differentiation (SETTLE), and carcinoma showing thymus-like elements (CASTLE). The former two are benign tumors while the latter two behave like malignant tumors.²

Spindle epithelial tumor with thymus-like differentiation (SETTLE) is a slowly progressive tumor with metastasis occurring later in the course of the disease. It occurs in the younger age group, mainly children and adolescents, although it may present in older age group too.³ They are highly cellular tumors comprised of compact bundles of long spindle epithelial cells which merge with tubulopapillary structures and/or mucinous glands.¹

A study of eight cases done by Chan and Rosai in 1991, where they reported unusual spindle cell tumours of thyroid gland. These cases were earlier reported as thyroid spindle cell tumor with mucinous cysts and malignant teratoma of thyroid gland. SETTLE probably arises from ectopic thymus, vestiges of the thymopharyngeal duct, or branchial pouch. The term SETTLE was used to suggest its

probable thymic origin and highlight its epithelial nature.⁴

There have been less than 50 cases published in the English literature. We report a case of a 13-year-old male patient with neck metastasis.

Case report

A 13-year-old male patient presented to surgical oncology OPD with complaint of asymptomatic right neck mass since 2 months. Patient gave history of midline neck swelling since birth which on Ultrasonography and Fine Needle Aspiration Cytology showed Thyroid swelling (?Adenomatous goitre/?Follicular Adenoma). He underwent left hemi thyroidectomy outside for the same in February 2020. The specimen biopsy reported mixed germ cell tumor – mature teratoma with yolk sac component. Slide review done at our institute showed SETTLE.

Six months after thyroid surgery, the patient developed right neck swelling and presented to our OPD in October 2021. The swelling was firm, non-tender located in the right supraclavicular region. Thorough examination of head and neck region was done. Direct laryngoscopic examination showed bulky tonsils with right tonsil larger than the left one. CECT of neck showed 25x22x25 mm lesion in right oropharyngeal wall. 18x21 mm right neck node in level IV. Incisional biopsy from the swelling done outside diagnosed it as extragonadal yolk sac tumor. Slide review of this biopsy done at our Institute showed SETTLE. Immunohistochemistry was done and yolk sac tumor was ruled out after discussion with pathologist.

Thereafter patient underwent PET CT which showed uptake in right supraclavicular lymph node of size 21x19x52 and SUV max=7 [Figure 1]. Patient underwent right modified neck dissection type III in December 2021. Specimen biopsy report showed single lymph node involved, largest lymph node being 6.5 cm without any extranodal extension. The diagnosis was metastasis from SETTLE in a known case of the same.

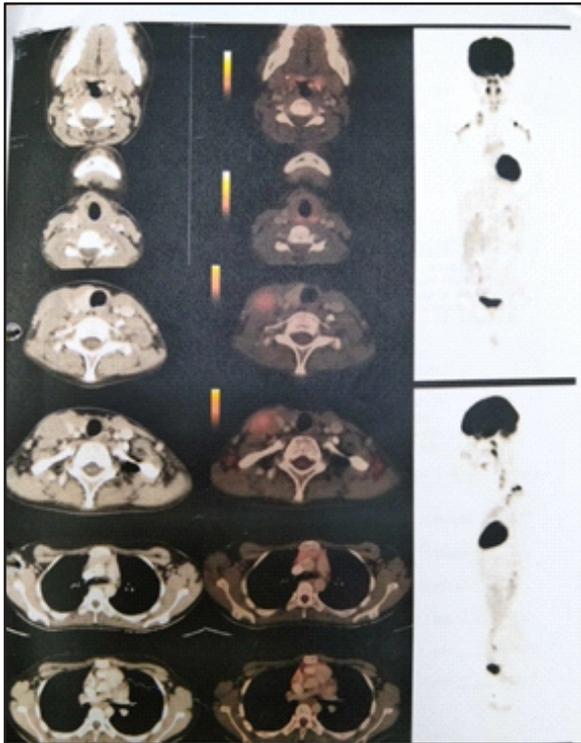


Figure 1: PET CT Images of patient

Patient was followed up monthly.

Discussion

SETTLE is a rare low grade slow growing tumors. It is a malignant tumor of the thyroid gland probably arising from thymic tissue or branchial pouch remnants.

“It is composed of spindle cells epithelial nature forming fascicles, merging into glandular structures taking the form of tubules, papillae, and cystic spaces. In some cases, cysts or glands lined by mucinous or respiratory epithelium may be present. Rare cases may be predominantly monophasic, with spindle cell predominance”.⁶

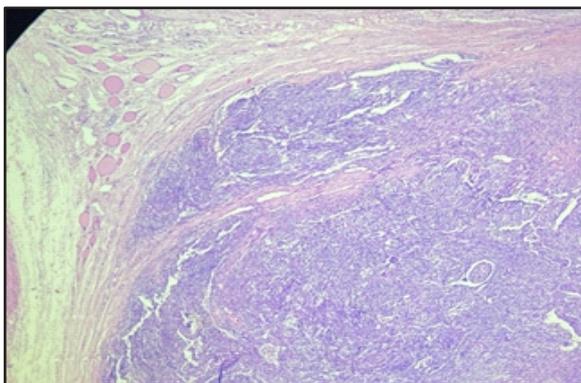


Figure 2: Histopathology image

Section shows circumscribed tumor with intervening fibrotic bands. Tumor shows biphasic component composed of epithelial and spindle cells [Figure 2].

The tumor cells test positive for epithelial markers on immunohistochemical staining which is consistent with tonofilaments and desmosomes observed in the ultrastructure. Also, the spindle cells stain strongly with 34bE12 suggesting high molecular weight cytokeratin expression which is seen in squamous cells.⁶ Our patient showed positive staining for CK5/6, CK7, Vimentin and TLE1.

Metastases is seen in about 20% of the patients but most of the times it is diagnosed when the tumor is still localized. Relapse of metastases has been seen to occur many years after first diagnosis, with mean time to relapse being 11 years. Due to its rare nature, no standard treatment has been established for SETTLE with metastases. Limited data is available regarding chemotherapy or radiotherapy, their efficacy and tumor response to them.⁷

Ultrasonography may be useful in evaluating thyroid gland and localizing suspicious lymph nodes including their size and number. The gold standard for treatment is surgery. Advanced stages may be treated by chemotherapy or radiotherapy to control tumor growth as well as for metastases, vascular invasion or locally infiltrative disease. Amongst chemotherapeutic drugs, cisplatin, etoposide and cyclofosamide have been found effective. In patients with inoperable disease, bone metastases or painful masses, radiation may be used as a neoadjuvant therapy.⁸

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Presentations at Clinical Meetings

(July 2022 to December 2022)

Sr No.	Date	Speaker / Department	Title
1	09.07.2022	Aron Jebin Surgical Oncology	Intraoperative Neuromonitoring System Using Needle and Skin Electrode During Thyroid Surgery
		Vasava Swetang Physiotherapy	Role of Transcutaneous Electric Nerve Stimulation in the Management of Trigeminal Neuralgia
2	23.07.2022	Maji Debajyoti Medical Oncology	Fixed-dose Combination of Pertuzumab + Trastuzumab for Subcutaneous Injection Plus Chemotherapy in HER2+ve Breast Cancer
		Mandalia Toral Molecular Diagnostics & Research Lab-II	Prognostic Significance of BCR-1 and BCR-3 Isoforms of PML-RARA and FLT3-ITD in Patients with Acute Promyelocytic Leukemia
3	13.08.2022	Shukla Shivang Surgical Oncology	A Study of 40 Patients of Chondroblastoma of Extremities Treated with Curettage and Reconstruction with Bone Graft or Bone Graft Substitute or Bone Cement: What Are the Outcomes?
		Joshi Jigna Molecular Diagnostics & Research Lab-III	miRNA Expression Profiling and Emergence of New Prognostic Signature for Oral Squamous Cell Carcinoma
4	10.09.2022	Gupta Ruby Gynaecological Oncology	Prognostic Evaluation of Human Epididymal Protein 4 (HE4) in Carcinoma Cervix
		Trivedi Pina Cytogenetics Lab	FISH Analyses for 1p and 19q Status On Gliomas: Reporting an 8 Years' Experience from a Tertiary Care Center in the Middle East
5	24.09.2022	Pawar Ajinkya Surgical Oncology	Guide to Enhanced Recovery of Cancer Patients Undergoing Surgery: ERAS and Oesophagectomy
		Desai Nilima Microbiology	Isolation of Different Non-Lactose Fermenting Gram Negative Bacilli (NLFGNB) and Their Antimicrobial Resistant Pattern: A Retrospective Analysis
6	08.10.2022	Shrikanth R. Medical Oncology	Total Neoadjuvant Therapy for High Risk Rectal Cancer in Western and Asian Populations Current Evidence and Clinical Applications
		Shukla Shivang Surgical Oncology	Perioperative Systemic Therapy in Pancreatic Cancer
7	26.11.2022	Anwar Ali Surgical Oncology	Melanomas of Oral Cavity
		Jansari Amita Anesthesia	Anesthetic Management of Children with Moyamoya Disease: Report of Three Case Series
8	10.12.2022	Bikkana Satyadeep Surgical Oncology	Post Esophagectomy Cardiac Complications: Institutional Experience and Review of Literature
		Suthar Ritesh Nuclear Medicine	Sentinel Node Biopsy Using Radio Colloid, How Do We Do It In Oral SCC and Breast Carcinoma

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Integrating PMJAY Process with Indigenous Software Solutions to Optimise Patient Movement

Shah Anand¹, Shrotriya Ratnakar²

Assistant Professor¹, Medical Record Keeper²

Department of Community Oncology & Medical Records

The Gujarat Cancer & Research Institute, Asarwa, Ahmedabad, Gujarat, India

Corresponding Author: anand.shah@gcriindia.org

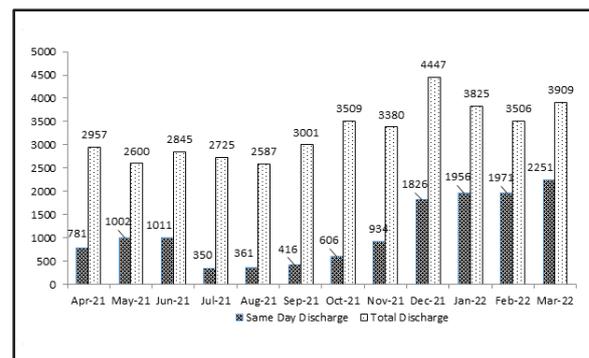
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Aysuhman Bharat is a flagship scheme of Government of India (GOI) which was conceived to achieve vision of Universal Health Coverage. With reference to National Health Policy 2018, GOI launched Pradhan Mantri Jan Arogya Yojna (PM-JAY) for providing secondary and tertiary care under the banner of Ayushman Bharat. National Health Authority which is an apex body to manage PM-JAY scheme from central level, claims to provide benefit to more than 50 crore poor beneficiaries across India. Each family is given benefit of services up to 5 lakh rupees. These number claims PM-JAY scheme as world’s largest government sponsored insurance scheme. Today GCRI is one of the largest hospital beneficiary of PM-JAY scheme among government institutes of India and is also ranked as 2nd best performing public hospital (Large State) by National Health Authority under PMJAY network in September 2021. Every day more than 450 beneficiaries visit PM-JAY department of GCRI for different processes like registration in scheme, pre authorisation, and discharge process. Managing such large number of patients at PM-JAY desk has not been an easy task and to optimise the entire process of PM-

JAY scheme, we have introduced new indigenous IT software adjacent to existing GCRI HMIS (GCRI.net).

Key features of this indigenous software:

- With every registration and pre authorisation in PM-JAY scheme, a token number was generated which helped to streamline all other processes.
- All PM-JAY desks were given a unique number through which all the processes can be tracked.



*intervention of indigenous software was introduced in October 2021

Figure 1: Mean monthly patients enrolled under PMJAY scheme for same day discharge and overall discharge at GCRI



Figure 2: File check module to sort and assign token number to PM-JAY beneficiaries

- Nursing office, PMJAY - medical officer and RMO were able to track pending work at pre authorisation desk, chemotherapy wards and for discharge, with all these data they were able to do timely intervention for delays.
- A central console was created for top line management through with which they were enabled to track entire workflow of schemesuch as number of registrations, preauthorisations and discharges done through various desks. This feature provides valuable insights to management

for managing manpower and to evaluate functioning of PM-JAY scheme.

- Newly formed software was linked to GCRI's HMIS software (GCRI.net) and with two of PM-JAY softwares named Beneficiary Identification System (BIS) and Transaction Management System (TMS), this has ensured seamless integration of data and records. This software helped significantly to make reports for management presentations as well as for providing various government reports.

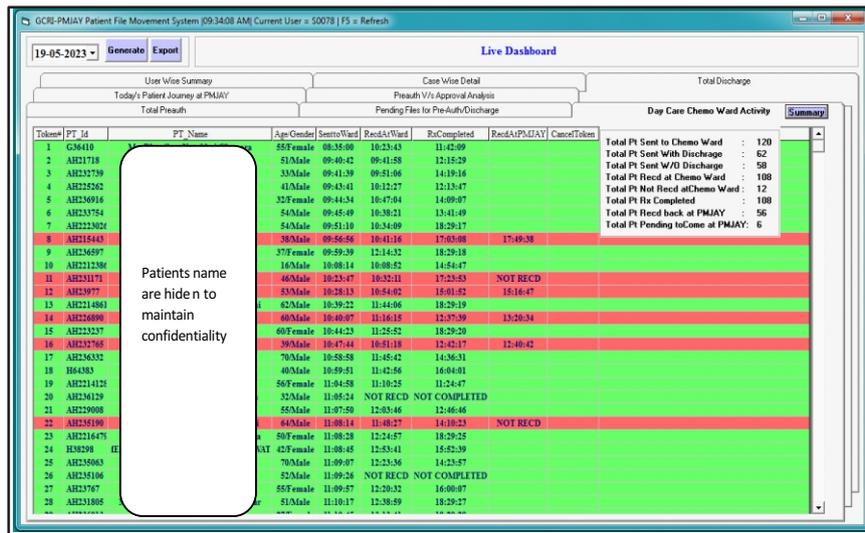


Figure 3: Ward module to manage patients at chemotherapy ward

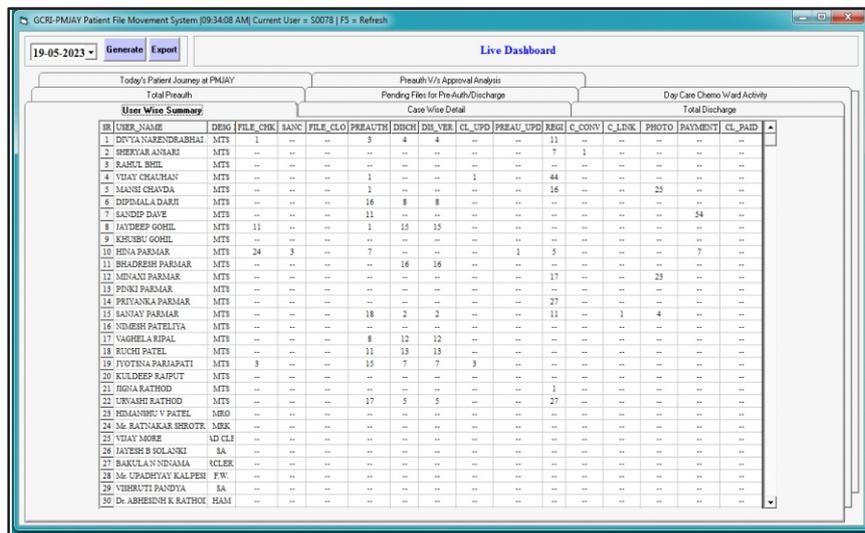


Figure 4: Central console for top line management to monitor functioning of PM-JAY scheme

Outcome of this structural change:

This software was rolled out in October 2021, to compare its effectiveness we have taken data of patients discharged under PM-JAY scheme from period of six months before and six months after intervention. On comparison we have observed that mean monthly day care patients enrolled under PM-JAY scheme were increased from 653.5 + 52.6

patients to 1590.6 + 109.8 patients. At the same time total number of discharges under PM-JAY scheme were increased from 2785.8 + 29.5 patients to 3762.6 + 65.4 patients. This software has helped to optimise GCRI PM-JAY process and made significant improvement in patient movement across different levels within the hospital.

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Glimpse of PMJAY multitasking desk



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