

Happenings at Sri Ramakrishna...



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Shri.D.Lakshminarayanaswamy Managing Trustee

It gives me immense happiness to be a part of this organization and privilege to be the part of the team that constantly strives to provide the best possible. We work with a vision to make world-class healthcare affordable. We believe constant change is important to bring the best out of anything. Similarly technology is the foundation of state-of-the-art medical services.

Sri Ramakrishna Hospital has been a front runner in many spheres of medicine. From investing in education to research and state of the art infrastructure, address the growing burden of kidney diseases and ensure that every individual

receives the care they need to live a healthy, fulfilling life. This World Kidney day March 14, 2024, together let us take pledge to drink plenty of water, exercise

regularly, and maintain a balanced diet to support our kidney health and encourage others to prioritize their kidney health. Together, we can make a positive impact on kidney health globally.

Wishing a Happy Women's Day to all the trailblazing women who have paved way for the future generations.



Dr. S. Rajagopal Medical Director

Sri Ramakrishna Hospital has always been a forerunner in conducting diverse academic programs alongside its clinical achievements. The emphasis on clinical club meetings, where discussing interesting cases adds an enriching dimension to the professional development of the team.

The specific focus on Nephrology, Urology & Andrology and Ophthalmology this month demonstrates a commitment to staying updated with medical advancements and addressing a broad spectrum of healthcare needs. This proactive approach not

only benefits the medical professionals involved but also enhances the overall quality of patient care.

World Kidney Day is celebrated every second Thursday of March. In 2024, this special day falls on March 14th and theme for the year is "Kidney Health for All - Advancing Equitable Access to Care and Optimal Medication Practice".

Editorial Team		
<b>Dr.N.Loganathan</b>	Dr.S.Prahadeeshwaran	<b>Mr.Murali Kaliappan</b>
Pulmonologist	Head - Public Relations	Head - Marketing

# Sri Ramakrishna Hospital WORLD CANCER DAY - 04.02.2024

On Occasion of World Cancer day(February 4,2024), Sri Ramakrishna Hospital- Sri Ramakrishna Institute of Oncology & Research, launched QR codes which provides complete information about Cancer in Tamil and English. Also, under Project DEEPAM, Free Mammogram screening for the entire year 2024 was launched on February 3, 2024 at Smt. Velumaniammal Auditorium.



Dr.P.Guhan, Director of SRIOR, conveyed that "the estimated

number of Cancer cases in India after 2022 is 16.67 lakh. In women, Breast cancer is found to be the commonest cancer, whereas in men it is lung cancer. Unfortunately, a majority of women do not seek medical evaluation either due to fear or hesitation; hence 50% of patients who come for breast cancer treatment arrive in advanced stages.

This year, we have brought together all our extensive cancer awareness contents under one platform. They can be freely accessed by anyone just by scanning the dynamic QR code that we have been launched. Also, women aged 45 and above can get their breasts examination at Sri Ramakrishna Institute of Oncology & Research. Those who require mammogram screening can get it done free of cost on all working days between 10am and 5pm".

These initiatives were launched by Mrs. K. Bhavaneeswari, Inspector General of Police, West Zone, Shri. C.V. Ramkumar, CEO, SNR Sons Charitable Trust presided over the event. Dr.Karthikesh, Consultant Surgical Oncologist, SRIOR proposed Vote of Thanks.

## Sri Ramakrishna Hospital DIAGNOSTIC INNOVATION & EXCELLENCE AWARD - 01.02.2024



Sri Ramakrishna Hospital (Multi-Specialty) bagged the Best In-House Diagnostic Services in a Hospital (South Zone) Award

The event took place at Taj Lands Ends Mumbai on 1<sup>st</sup> February 2024, which was graced by notable delegates and industry expert in the healthcare and diagnostics sectors.

During the Diagnostic innovation & Excellence award event, Sri Ramakrishna Hospital (Multi-Specialty) bagged the Best In-House Diagnostic Services in a Hospital (South Zone) Award.Dr.Alagappan

(Medical Superintendent) along with Mr.R.Dorairaj (Administrative Director - Diagnostics) received the award on behalf of the Hospital.



Benign Entity Mimicking Malignancy: A Rare Case of Giant Cell Tumour of Scaphoid Bone With Lung and Skeletal Metastasis

**Introduction:** A giant cell tumour (GCT) is a benign and locally aggressive tumour which is a distinct neoplasm arising from non bone forming supportive connective tissue of marrow with network of stromal cells regularly interspersed with giant cells. It usually occurs near a joint at the end of the bone. Most occur in young adults when skeletal bone growth is complete. predominantly occurring in young adults aged 20 to 40 with a high recurrence rate and the potential for aggressive behaviour. Local aggressiveness varies from focal symptoms arising from bony or cortical destruction and surrounding soft tissue expansion to the rare occurrence of metastasis. Typically found at the metaphyseal or epiphyseal regions of the tibia or femur, GCT, despite its predominantly benign nature, exhibits a highly unpredictable spectrum of disease behaviour. Under the microscope, the biopsied tissue reveals multinucleated giant cells comprising 3 distinct cell types:

- · Giant cell tumour stromal cells originating from osteoblasts
- Mononuclear histiocytic cells
- · Multinucleated giant cells belonging to an osteoclast-monocyte lineage

The precise etiology of GCT is not fully understood, and there is ongoing debate about whether it represents a true neoplasm or a reactive condition. Notably, a 20q11 amplification is seen in 54% of GCTs, and 20% of cases exhibit overexpression of p53. Centrosome amplification and boosted telomerase activity, coupled with the prevention of telomere shortening, provide evidence supporting a neoplastic origin. The pathogenesis of GCT appears to be significantly influenced by the receptor activator of the nuclear factor kappa B [NF-kB] ligand (RANKL). Under normal physiologic conditions, osteoclast formation requires interaction with cells of the osteoblastic lineage, which may depend upon cell-cell contact and the interaction of RANKL with its receptor RANK.

Metastasis in GCT of bone varies between 0% and 9%. The most common sites include lungs. Other less common sites include brain, kidneys, bone, skin and lymph nodes. The presentation of GCT is extremely rare in locations like carpal bones. This case is being reported due to its rare presentation and response to human monoclonal antibody-Denosumab

**Case Presentation:** A 33 year old female, presented with complaints of swelling, pain and inability to move the thumb finger of right wrist. The patient was initially treated conservatively at a nearby hospital as a case of tenosynovitis for a year.

Patient was then advised to take an MRI Right Wrist( PLAIN) on 04 May 2023 which showed "The Lunate appears hyperintense on the T2 W/STIR images and hypointense on the T1 W images suggestive of Avascular necrosis (Kjenbock's disease). Patchy hyperintensity is also seen in the distal scaphoid bone suggestive of Marrow edema/Contusion. Mild effusion in the left wrist joint and intercarpal articulations. The patient was subsequently advised carpectomy if pain persists.

The patient did not seek surgery and was managed with analgesics and anti inflammatory medications for 4 months. As the pain did not subside and patient had complaints of mild cough, a CT CHEST was taken on 6/01/2024 which showed evidence of mixed density lesion involving right lung upper lobe para vertebral location measuring 3.57 x 3.19 cms. Multiple destructive lesions noticed in vertebral column, sternum and carpal bones.

The CT finding suggested a possibility of Bronchogenic carcinoma with lung, lymph nodal and skeletal metastasis (Vertebral column, sternum and carpal bones) should be considered. PET CT SKULL BASE TO MID THIGH (11/01/2024) showed FDG avid heterogeneously enhancing mass lesion measuring  $3.4 \times 2.8$  cms is seen in right lung upper lobe, paravertebral in location (SUV max – 19.6).

FDG avid and non-avid nodules are seen in both lungs, largest measuring 1.3 x 0.8 cms in the left upper lobe (SUV max- 7.5). FDG avid expansile lytic lesions are seen in left carpal bones (SUV max - 18.1). FDG avid sclerotic lesion notes in sternum (SUV max-3.1).Diffuse marrow FDG uptake noted in axial skeleton. Final impression of PET CT is Hypermetabolic primary malignancy of right lung. Hypermetabolic lung and skeletal metastases- Stage 4. CT guided trucut biopsy of right lung Upper lobe mass (09/01/2024) showed - Giant cell rich lesion. metastatic giant cell tumour of bone. USG guided biopsy of scaphoid lunate lytic lesion (16/01/2024) showed - features suggestive of Giant cell tumour.



**Radiology:** CT wrist showing patchy hyperintensity in the distal scaphoid.



CT chest showing a growth in the Right Lung





PET CT

### Histopathology

**Lung biopsy:** Cores of a lesion rich in closely packed osteoclast like multinucleate giant cells. Scant intervening stroma shows haphazardly arranged spindle cells with scant to moderate cellularity. Focal necrosis is noted.



**Carpal Bone Biopsy:** Cores of neoplasm composed of numerous multinucleate osteoclast type giant cells and admixed mononuclear stromal cells, which are round to spindle shaped with moderate eosinophilic cytoplasm, uniform nuclei, condensed chromatin and conspicuous nucleoli. Mitosis is 0 to 2 per 10 high power fields. Focal intratumoural reactive neoosteoid formation is noted.



Histopathology features of Giant cell tumour: Giant cell tumour is a highly cellular lesion typically dominated by large numbers of non-neoplastic osteoclast-like giant cells, between which mononuclear cells are embedded. The giant cells have a variable number of nuclei, some with > 50 per cell. Mononuclear cells in giant cell tumour exhibit a variety of morphological appearances, including round to oval cells in a non-fibrotic background and spindled cells associated with fibrous matrix. The typical features of a giant cell tumour can be obscured by extensive necrosis, recent haemorrhage, haemosiderin deposition, aneurysmal change, collections of foamy macrophages, and reactive/reparative non-mutant fibrous tissue. In addition, areas of stromal overgrowth of the neoplastic mononuclear cells are uncommon. The presence of substantial deposition of bone is not common, although reactive/metaplastic bone formation can occasionally be striking and can be prominent when associated with a fracture. Giant cell tumour may metastasize to the lung, and in these cases the histological appearance is similar to that at the primary site

Malignant giant cell tumour: Primary malignancy in a giant cell tumour is uncommon and is typically represented by a nodule of highly pleomorphic, neoplastic mononuclear cells in an otherwise conventional giant cell tumour. Malignant transformation in a giant cell tumour is more common than the primary subtype and occurs after treatment of a conventional giant cell tumour, including with radiotherapy. The conventional giant cell tumour may or may not be detectable in these cases. The malignant component of a giant cell tumour does not have specific histological features and may be either an undifferentiated sarcoma or an osteosarcoma with telangiectatic or osteoblastic features.

**Immunohistochemistry:** H3.3 p.GIy34Trp (G34W) immunohistochemistry is a reliable surrogate marker for molecular analysis.

### Treatment

The patient was started on Injection Denosumab 120 mg (Mechanism of action: binds the cytokine RANKL (receptor activator of NF $\kappa$ B ligand), an essential factor initiating bone turnover. RANKL inhibition blocks osteoclast maturation, function and survival, thus reducing bone resorption. RANKL inhibition blocks osteoclast maturation, function and survival, thus reducing bone resorption. It is administered subcutaneously on Day 1, Day 8 and Day 15. The patient showed significant improvement in pain and movement.

Dr.P.GUHAN MBBS, MD, DMRT, DNB. DM

Director/ Consultant Medical Oncologist





### Experience on Rare Tumor -Sacral Chordoma

### Introduction

Chordoma is a rare malignant tumor of the skull base and axial skeleton, with an incidence of less than 0.1/ 100,000 per year. It is presumed that the notochord developed in fetal development evolved from cellular residues. Patients with advanced chordoma have a poor prognosis due to locoregional recurrence with the infiltration and destruction of surrounding bone and soft tissue. Cytotoxic chemotherapy or other systemic therapies have not been proven to be effective for these diseases, where surgery plays an important role in the cure and control of the disease, though surgeries for this kind are complex and technically challenging. Here, we present our experience with two rare cases of sacral chordoma.

CASE 1: 67 years old diabetic women who evaluated for lower back ache and difficulty in holding urine and stools for 10 months in outside hospital presented to us with pain in bilateral foot and leg and pain while sitting up. There was no history of trauma.On general examination, she was pale, bilateral pitting edema of foot and leg, No mass or organomegaly made out in abdominal examination, but digital rectal examination revealed a firm mass on the posterior wall of rectum, with upper limit of the lesion could not be reached .anal sphincter tone was lost. She underwent contrast enhanced CT imaging which revealed an expansile destructive type of lytic lesion with large soft tissue component is seen involving the sacrum. The multifocal calcified lesion is seen to involve the body and the neural arch of the sacrum with few non-enhancing areas represents cystic spaces/necrosis. Anteriorly the lesion is seen to extend into the presacral space and displacing the rectum anteriorly. Fat plane with the rectum is maintained. Posteriorly extending into the muscular plane, infiltrating the erector spinae muscle. The subcutaneous tissue in the

sacral region appears normal. Later all the lesion was limited by the piriformis muscle on either side. No evidence of extension into the pelvic side wall. Superiorly the lesion is limited upto the superior endplate of S2 vertebra. S1 vertebra and the sacral ala appears normal. Inferiorly the lesion is limited up to the S5 vertebra. No evidence of infiltration into the coccyx. CT guided biopsy through posterior approach revealed conventional chordoma with immunohistochemistry confirming the diagnosis with S 100 and Brachyury positivity. After multidisciplinary team discussion, patient had underwent neoadjuvant radiotherapy to the lesion, 50 Gy, 21 fractions, mass lesion persisted and planned for enbloc resection of tumour for local control of disease.

She underwent surgery under general anaesthesia, enbloc resection of sacral bone upto S1 vertebrae (High sacrectomy) with surrounding part of gluteus maximus muscle excised for clearance, with careful and meticulous dissection bilateral sciatic nerves which was in close proximity to tumour was well preserved. The surgical defect was closed primarily. Post operative period was uneventful. Physiotherapy and rehabilitation programme was initiated at the time of discharge. Post operative HPE analysis were suggestive of Poorly differentiated Chordoma, Anterior, Posterior, Right lateral, Left lateral, Superior and Inferior soft tissue margins, Inked prevertebral fascia, overlying skin and its margins are free of tumour. No lymphovascular tumour emboli, perineural tumour invasion seen which warranted only regular follow up.



**CASE 2:** 68 years, female who had history of lesion in lower back excised in 2016 now presented complaints of back pain radiating to left lower limb for 1 month, MRI pelvis: lesion in left side pelvis closely abutting s2 vertebra on left side, extending into left perirectal region, left lateral wall of pelvis involving left obturator muscle and left gluteal muscle, exiting S1, S2 nerve roots encased by the lesion.



Core needle biopsy done suggestive conventional chordoma. She underwent wide local excision of the lesion, with S1, S2 nerve roots were encased by the tumour was sacrificed. 12 x 10 cm defect was closed with right gluteal fasciocutaneous v-y flap cover with plastic surgeon assistance. Post operative biopsy was conventional chordoma skin, margins free of tumour, sciatic nerve cut ends free of tumour sacral clearance is free of tumour. Lymphovascular tumour emboli, perineural invasion present. Adjuvant radiotherapy was given to prevent recurrence and patient is regularly followed up on.

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### **Conclusion:**

Sacral chordomas are rare tumours which usually presents late in disease course and tend to encase adjacent neurovascular anatomy(leading to morbidities like urinary, fecal incontinence, sexual dysfunction, limb weakness), seed resection cavities and recur locally and respond poorly to radiotherapy and conventional chemotherapy, all of which make chordoma, great challenge to treat. Extent of surgical resection, and adequacy of surgical margins are the most important prognostic factors.

The complexity of surgery, with wide resection of important structures and their reconstruction, precise dissection and preservation of neurovascular structures warrants patient with chordoma to be cared by highly experienced, multidisciplinary surgical team in tertiary centre, where Sri Ramakrishna Institute of Oncology and Research, Sri Ramakrishna hospital has shown excellent results in treating rare and complex surgical cases with help of multidisciplinary team's expertise.

> Dr. K. KARTHIKESH MBBS, MS, DNB, Mch, FRCS (EDINBURGH)

> > **Consultant Surgical Oncologist**



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Radiation Therapy in Cholangiocarcinomas -The invisible scalpel

Cholangiocarcinoma (CCA) is the second-largest hepatic malignancy after hepatocellular carcinoma (HCC), and recently, its incidence is increasing each year. The incidence of CCA varies geographically. The incidence in Southeast Asian countries is much higher than that in Western countries.

According to the anatomical location of tumor occurrence, CCA can be divided into intrahepatic cholangiocarcinoma (ICCA) and extrahepatic cholangiocarcinoma (ECCA). ECCA can be further divided into perihilar cholangiocarcinoma (pCCA) and distal cholangiocarcinoma (dCCA).

Cholangiocarcinoma (CCA) originates from the epithelium of the bile duct and is highly malignant with a poor prognosis. Radical resection is the only cure for primary CCA. The extent of surgical resection and lymph node dissection depends on the site and the extent of tumor involvement. Since the clinical symptoms of CCA



lack specificity, most patients present with advanced stage of the disease at the time of diagnosis. This reduces the chances of radical surgery. Even at an early stage, the postoperative recurrence rates are high. Radiotherapy is an important means of local control, known as "the invisible scalpel".

Radiation therapy has evolved from being a palliative treatment option to a radical treatment option in treating cholangiocarcinomas.In recent years, with the advancements in imaging and radiotherapy equipments and the progress of radiotherapy technology, the role of radiotherapy in the treatment of CCA has been greatly enhanced. The advent of technological advances such as intensity-modulated RT (IMRT), Stereotactic body RT (SBRT), respiratory motion management methods, and improved image guidance have enabled potentially ablative doses for the treatment of cholangiocarcinoma.

### **Case Report**

76 year old gentleman presented with abdominal pain and obstructive jaundice.

CT Abdomen revealed malignant lesion in the common bile duct with periportal lymphadenopathy. ERCP revealed ulcerated growth in the proximal CBD with obstruction.

After histopathological confirmation of malignancy, patient was administered 4 cycles of neoadjuvant chemotherapy. Post chemo MRI assessment showed minimal response, and he was referred for radiotherapy.

Radiotherapy planning was done with stereotactic body immobilisation. Patient was immobilized in supine position with a customized vacuum cushion using abdominal compression to minimize respiratory motion and underwent a planning CT scan with IV contrast. The gross tumor volume (GTV) was defined based on available imaging including the findings of ERCP, MRI, CT and PET CT.

The planning target volume (PTV) was created Organs at risk (OAR) were defined as applicable. Dose constraints were defined. IMRT planning was done. The treatment was executed with image guidance and verification.



Image-guided radiotherapy can make conventional radiotherapy procedures safer by virtue of increased precision of delivery. Moreover, it facilitates the precise application of specialized irradiation techniques like SBRT with narrow safety margins to radiosensitive organs.



The development of precision medicine also brings more treatment opportunities for patients with bile duct cancer. Radiation therapy has a direct cytotoxic effect on tumor cells and can produce certain antitumor immune responses by influencing the microenvironment and affecting distant tumor cells by releasing proinflammatory cytokines and chemokines, to mobilize systemic immune cells. There is preclinical and clinical evidence to indicate that SBRT in combination with immunotherapy is more likely to activate the immune response in the tumor area than conventional radiotherapy. Although there is little evidence at present, immunotherapy combined with radiotherapy shows a good prospect, which needs to be further explored.

Historically radiotherapy was used only in palliative settings in treatment of hepato pancreato biliary tract tumors in view of proximity of sensitive normal tissues and radiation toxicity. Nowadays, advances in imaging technology and radiotherapy technology provide prospects for the implementation of precise radiotherapy. In the future, based on tumor biological characteristics, biomarkers, and the direction of tumor microenvironment combined with appropriate imaging and radiotherapy, will become the trend in individual precision radiotherapy, further reducing the toxic side effects of radiotherapy and improving the prognosis of patients with CCA.

Dr.N.KRISHNA PRIYA MBBS, DMRT, DNB (RT) Radiation Oncologist



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### Coimbatore's first Integrated Brain and Mind Care Centre launched in Sri Ramakrishna Hospital

Sri Ramakrishna Hospital collaborated with Buddhi Clinic, Chennai and launched Coimbatore's first Integrated Brain and Mind Care Centre on July 2021.

This collaboration embraces modern science with ancient knowledge that will significantly contribute to make better quality of life and improve the daily activities of patients with Neuro-disabilities and mental health problems.



### The Services Offered At This Treatment Centre

This treatment centre will offer innovative services that enhance the integrated approach to long-term brain and mind care. For instance, Neuromodulation innovations being utilised are

- Transcranial Magnetic Stimulation (TMS) to treat neurological and psychiatric disorders in order to stimulate specific brain pathways for specific conditions and outcomes.
- Transcranial Direct Current Stimulation (tDCS) uses constant, low direct current delivered via electrodes on the head which stimulates specific brain pathways for specific conditions and outcomes and
- Transcutaneous auricular Vagus Nerve Stimulation (taVNS) stimulates the auricular (ear lobe) branch of the vagus nerve that innervates the human autonomic nervous system.

There are other innovations in the pipeline that we hope will lead to a paradigm disruption in this space and in turn will improve the quality of each patient's life significantly. Our aim is to continue to provide personalised and meaningful patient experiences at competitive rates.

The centre is very certain that their caring approach will add considerable value to all those patients approaching Sri Ramakrishna Hospital, seeking relief from pain, mental health, disability and lifestyle conditions, with neurology and psychiatry being a primary focus area.

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### SNR SONS CHARITABLE TRUST CELEBRATES 40<sup>th</sup> FOUNDER'S DAY - 2024









The SNR Sons Charitable trust celebrated 40<sup>th</sup>Founders' Day on 27<sup>th</sup> February 2024 at SNR Auditorium, Nava India. The SNR Sons Charitable Trust was established in the year 1970 by Sri.S.N.Rangasamy Naidu. The trust runs 19 Medical and Educational Institutions. The Managing Trustee Shri. D.Lakshminarayanasamy welcomed the gathering. Followed by, Heads of the Hospital and Educational Institutions presented their Annual Reports.

The Faculties and other staffs of Hospital and Educational Institutions who rendered their remarkable 25 years of service each, were honoured by the Chief Guest and Trustees. And Sri Ramakrishna Hospital was awarded with "Sustainable and responsible Health care Lab Award" by Mr.Krishnamurthy, General Manager, Quidel Ortho India.

Dr. Sudha Seshayyan, Director, Sastra University, Chennai a persuasive motivational speaker was the chief guest. Joint Managing Trustee, Thiru.R.Sundar, Trustee Thiru.S.Narendran & Thiru. V.Ramakrishna, CEO Thiru C.V. Ramkumar and other members of the Hospital and Educational Institutions gathered for the celebration.





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