



CASE BRIEF

Name: [REDACTED]

Age: 11 years, female.

Address: [REDACTED]

Contact no: [REDACTED]

Diagnosis: Osteosarcoma, right distal femur.

Date of Diagnosis: 09/06/2022

Ref by: Dr. Jalila

Surgery: Wide local resection of the right distal femur + ECRT and Reimplantation with vascularized fibula graft with Zimmer lateral femur condylar plate

Surgeons: Dr. Pramod S Chinder, Dr. Suraj HP, Dr. Prashanth Kesari

Medical Oncologist: Dr. Neema, Dr. Yogesh Gupta.

Radiation Oncologist: Dr. Madhusudhan

Date of Surgery: 14/12/2022

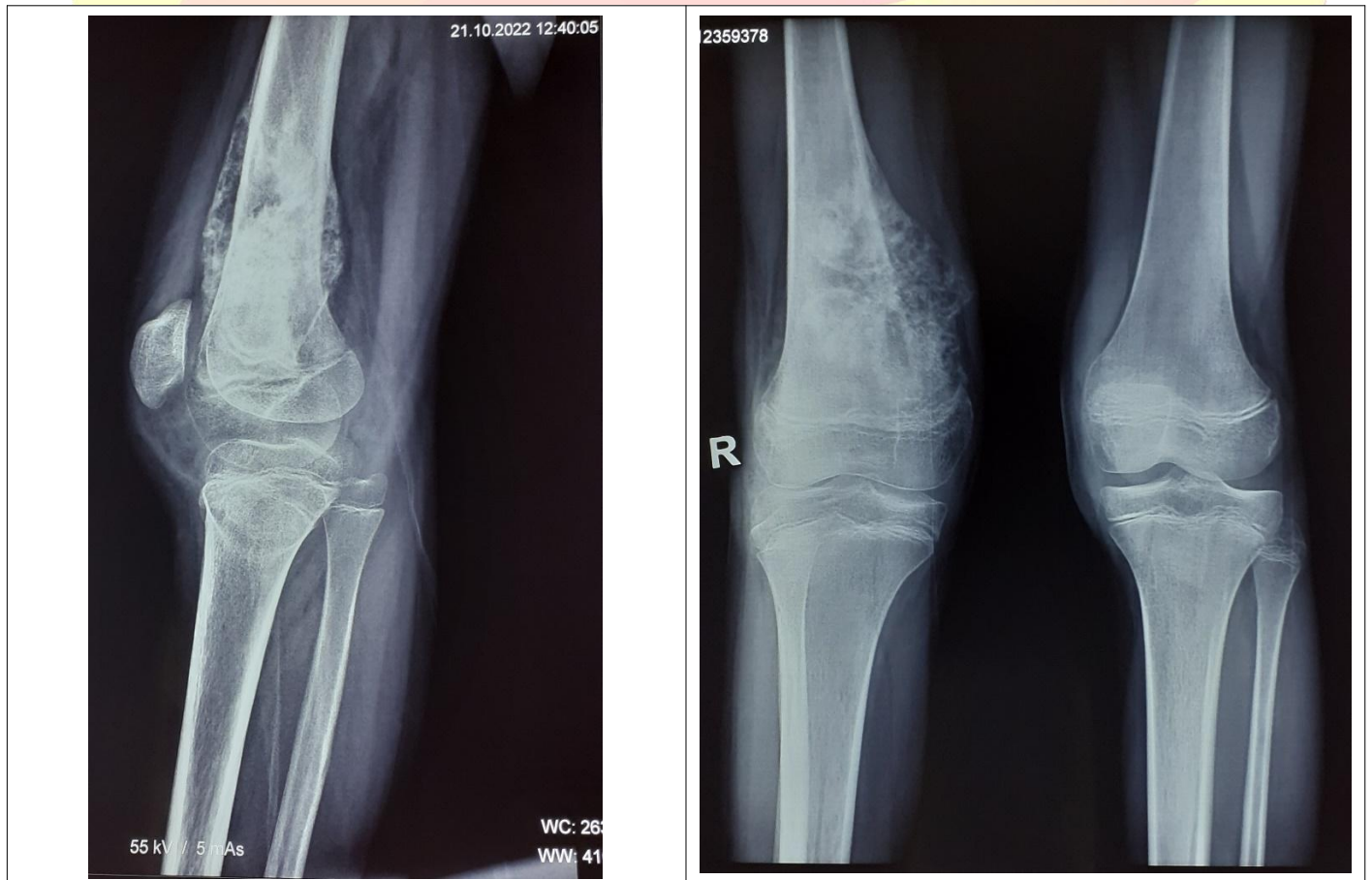
BRIEF SUMMARY OF THE EVENTS:

DATE	EVENTS	FINDINGS
Apr 2022	Right knee- Pain & swelling	Initially pain was mild, gradually increased in size, along with limping while walking. No H/O trauma, fever or weight loss.
8 th Jun 2022	CT Scan-Chest	No abnormality seen in the lungs.
9 th Jun 2022	MRI Scan	Likely Ewing's sarcoma. However, possibility of osteosarcoma cannot be ruled out.
9 th Jun 2022	CT guided biopsy	Osteosarcoma.
23 rd Jun 22 - 30 th Sept 2022	Chemotherapy MAP regimen	1 Cycle- Details unavailable.



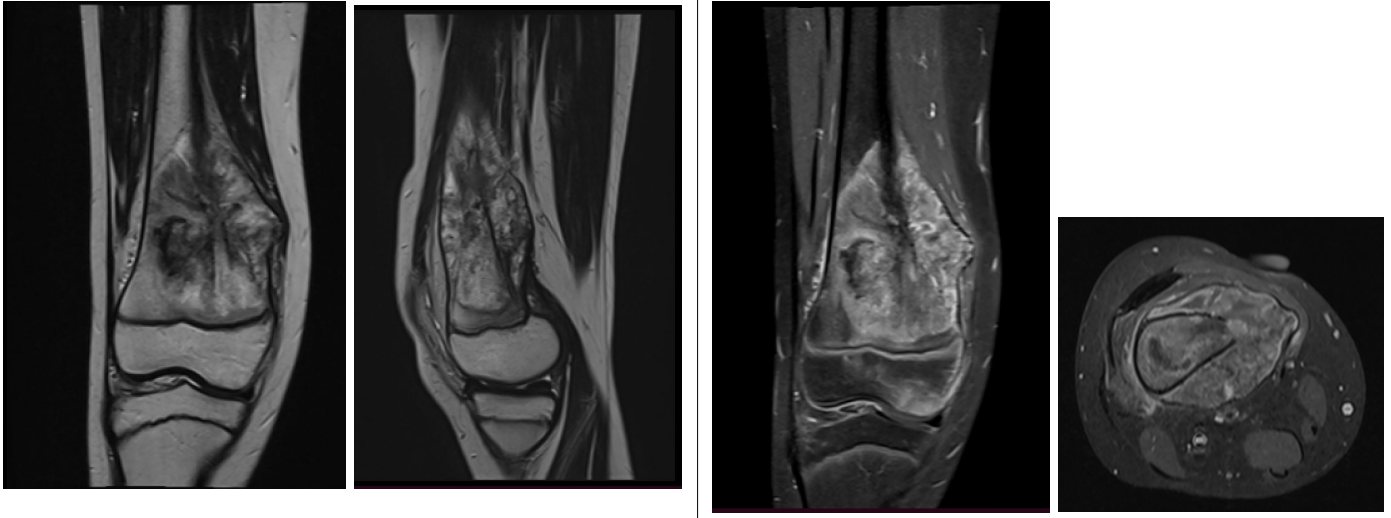
7 th Sept 2022	MRI Scan	Mild increase in size of the lesion. (Compared to 5.9 X 4.4 X 9.6 cm previously measuring 5.8 X 5.4 X 7.8cm.
Patient was referred to us for further management.		
20 th Oct 2022	PET Scan	Metabolically active lesion in the distal right femur- Suggestive of osteosarcoma.
20 th Oct 2022	MRI Scan	Suggestive of osteosarcoma.
24 th Oct 2022	J Needle biopsy	No viable tumor cells seen.
She was put on chemotherapy- 1 Cycle		
14 th Dec 2022	Surgery	Wide local resection of the right distal femur + ECRT and Reimplantation with vascularized fibula graft with Zimmer lateral femur condylar plate.
	HPE Report	Awaited

X-RAY IMAGES: 21/10/2022





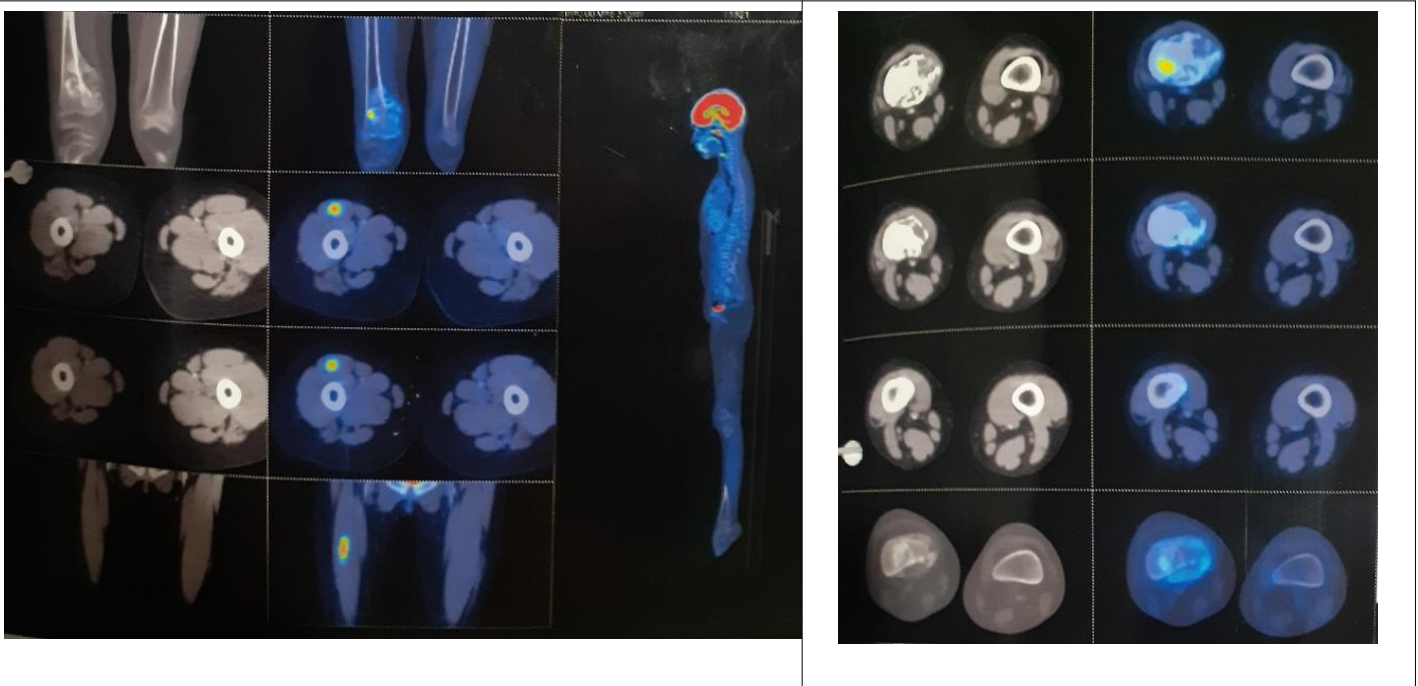
MRI IMAGES: 20/10/2022

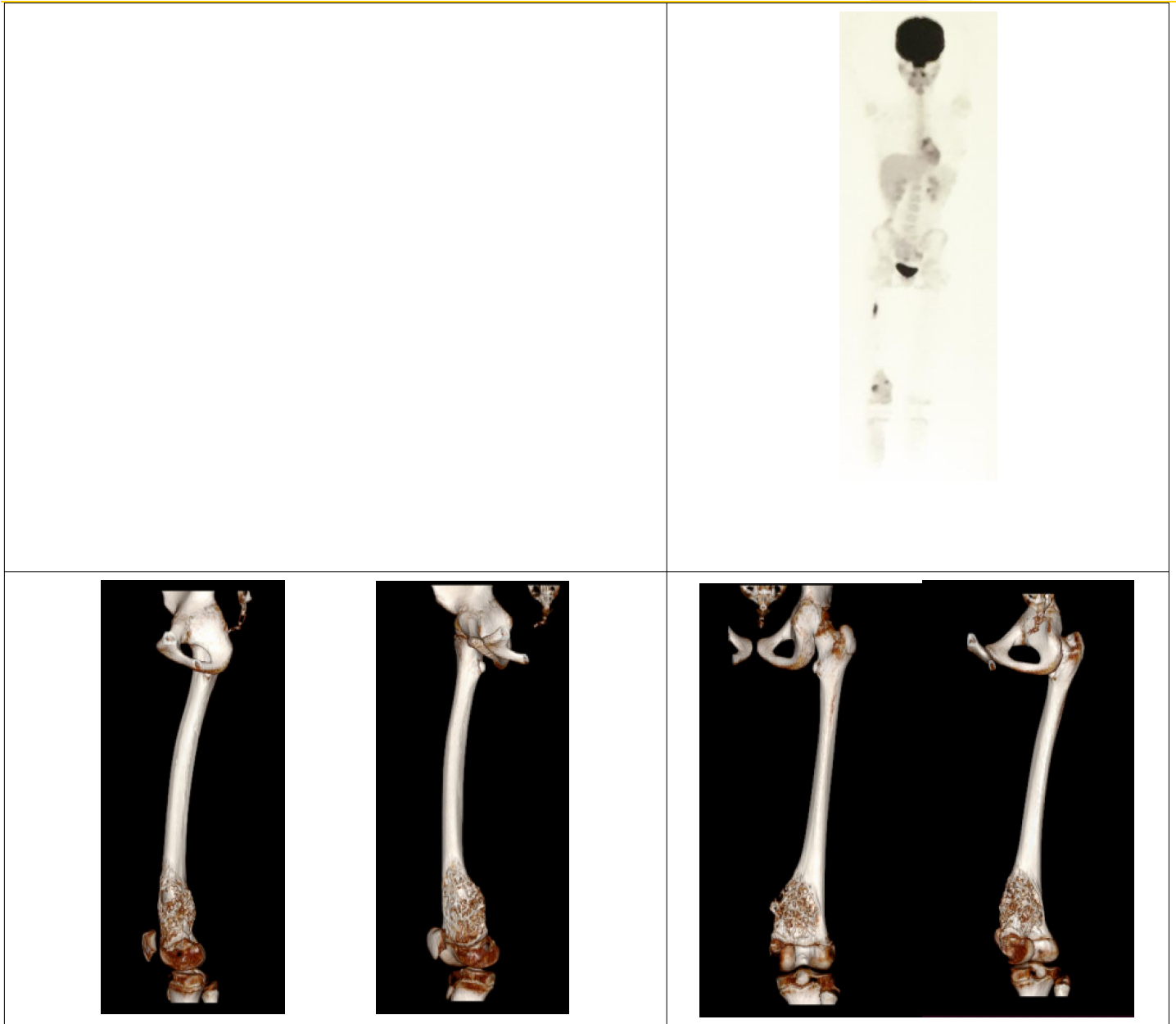


Findings:

1	Heterogeneously enhancing mass lesion involving the lower femur metadiaphysis, with extensions.
2	Patchy enhancement is also seen involving the medial femoral epiphysis and the upper fibular metaphysis.
3	No obvious extra osseous soft tissue is seen.

PET CT SCAN: 20/10/2022





Findings:

1	Metabolically active lesion in the distal right femur- Suggestive of osteosarcoma. (Lytic expansile lesion with periosteal reaction is noted involving the distal metaphysis-diaphysial region of the right femur for a length of 8.7cm with Max SUV 4.7, the lesion is extending upto epiphysis, however, no definite involvement of right knee joint.
2	Metabolically active lesion in the right rectus femoris muscle -Likely representing skip lesion. (Distance of 25.7cm from the right knee joint corresponding to an ill-defined intramuscular lesion on CT, measuring 14 X 15 X 46 mm with Max SUV 5.9
3	No other visceral or skeletal metastasis.



HISTOPATHOLOGY (J Needle Biopsy) 24/10/2022

Findings:

1	No viable tumor cells seen.
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3D PLANNING IMAGES

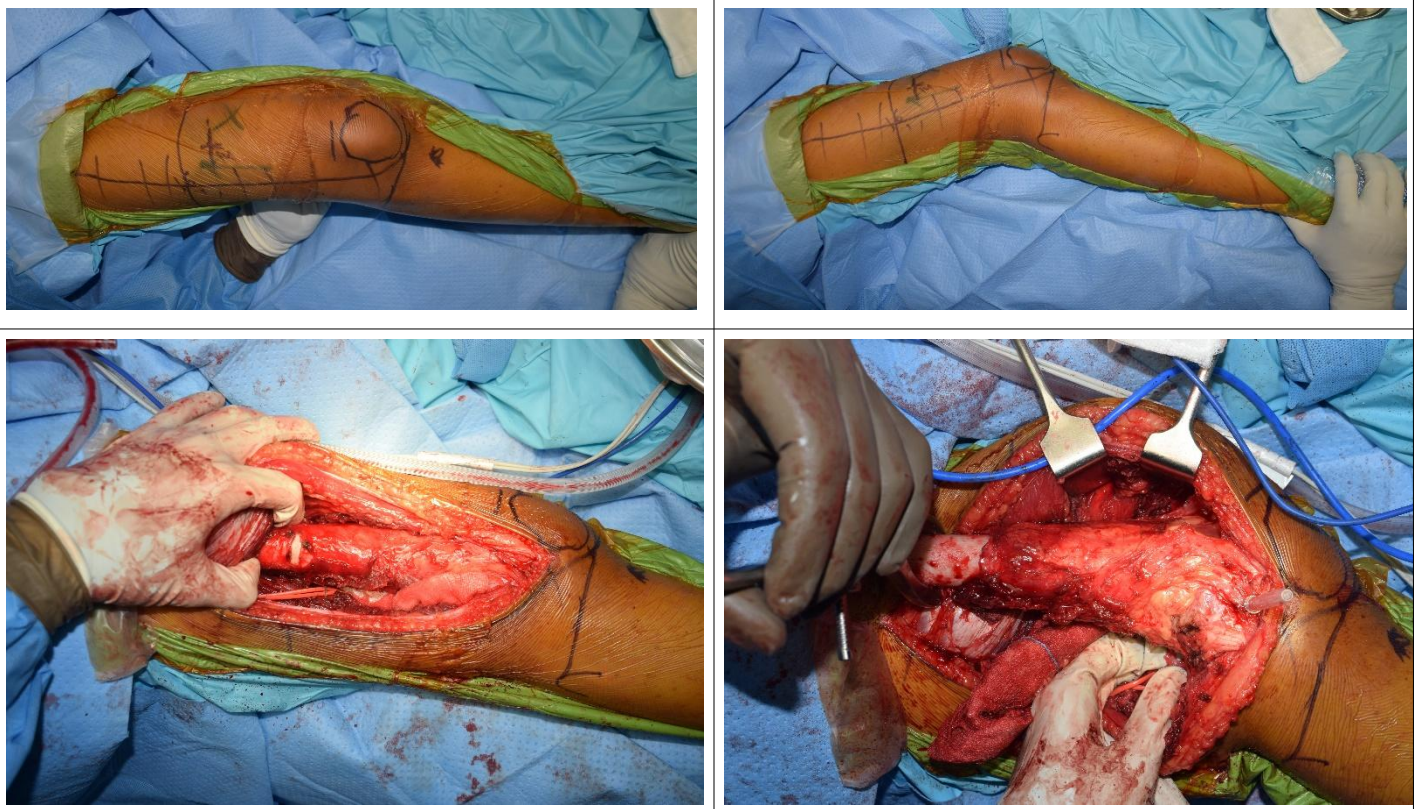


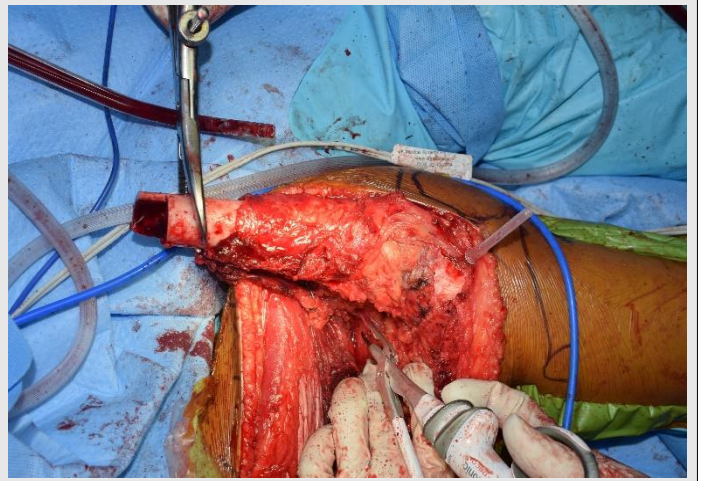
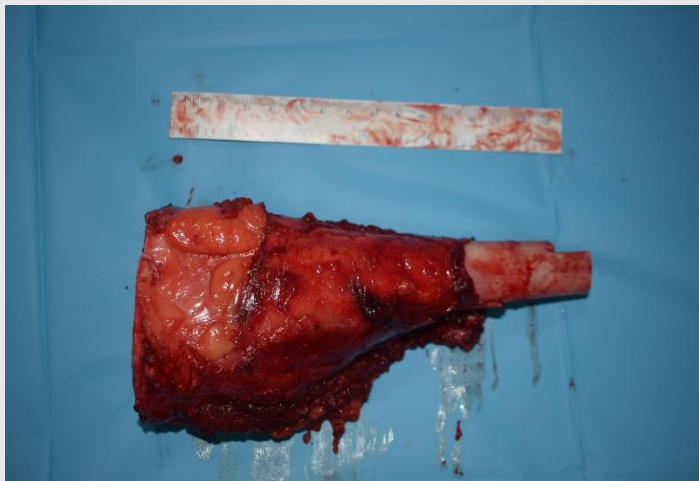
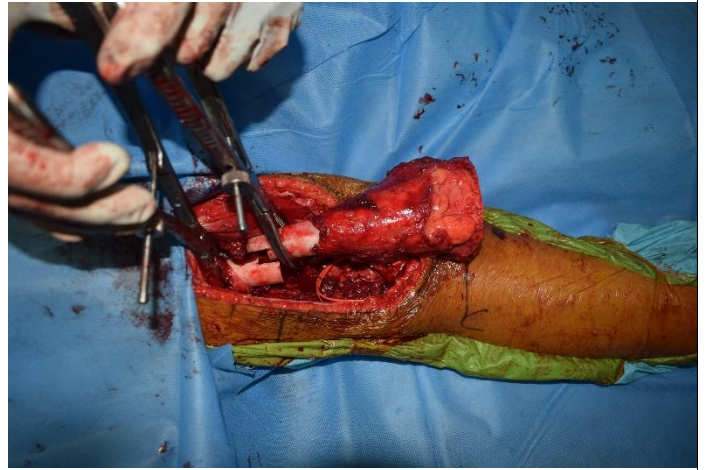
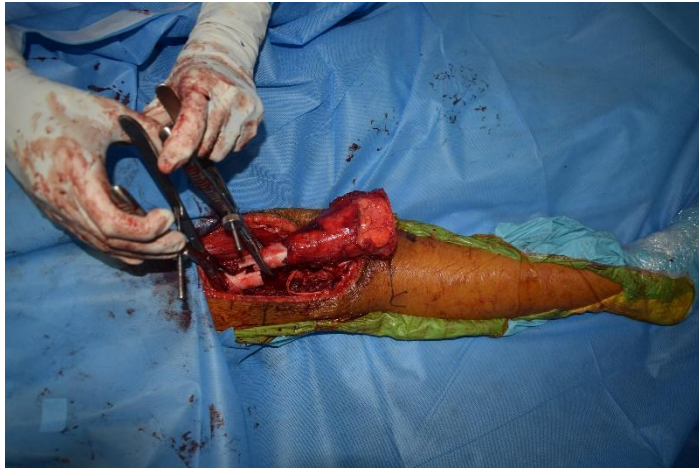
1	Anterior, lateral, medial, and posterior views of the ROI.
2	Anatomic model, and dummy implant (distal femur plate)
3	Titanium implant, and placement of the implant on the bone model.

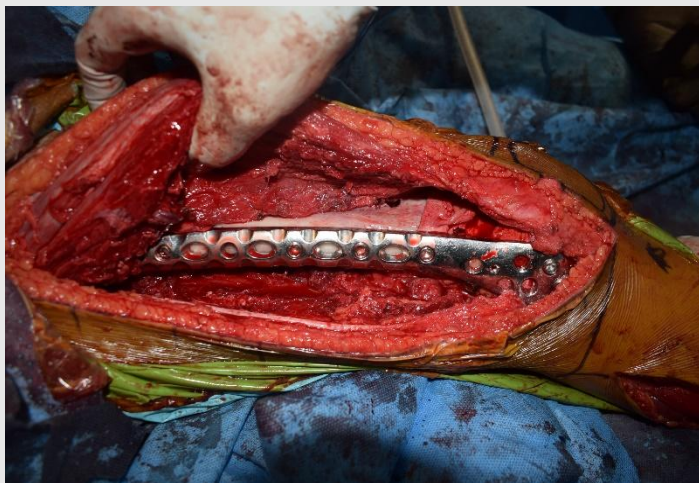
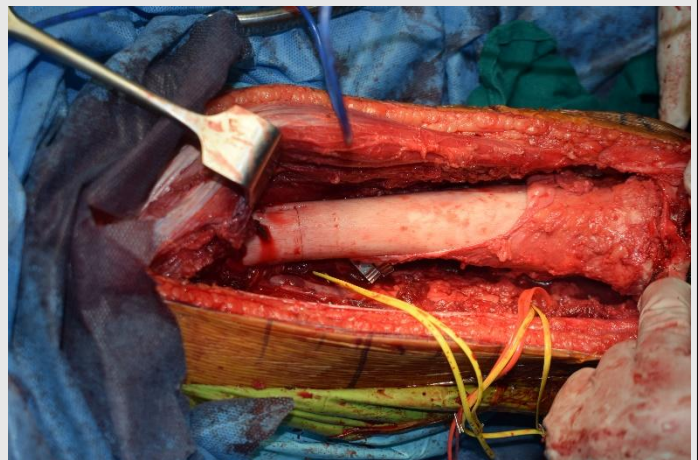
4 Orientation of the screws with respect to the remaining femur and grafted fibula.

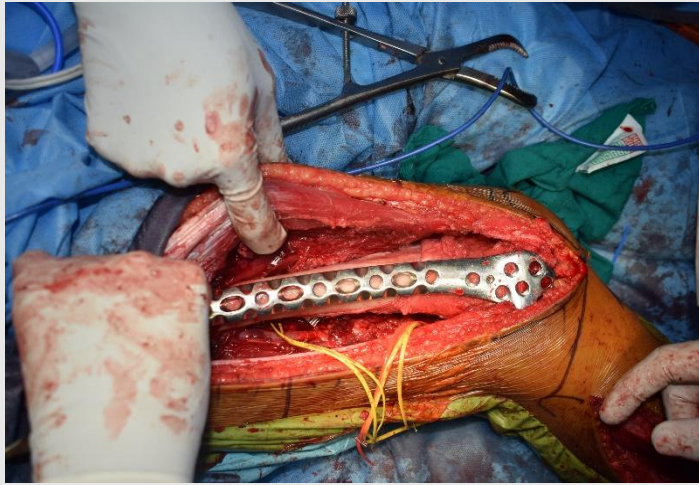
Note: 3D planning and printing had been done using the CT & MRI data of the patient. In the process, tumor resection planning (decision of margins, planes of resection) was done. Anatomic model of the Region of Interest (ROI) was printed for tactical analysis purposes. For the reconstruction planning, patient specific custom distal femur plate was designed, and printed with Titanium (Ti 6Al4V) material. During the surgery, given the factors such as, patient's age, good bone quality, and the fact that the patient has to travel abroad (Native: Oman), it was decided to use Zimmer's Co-Cr distal femur plate (MRI-compatible) instead, since the custom-made distal femur plate could yield in the longer run.

OPERATIVE IMAGES: 14/12/2022







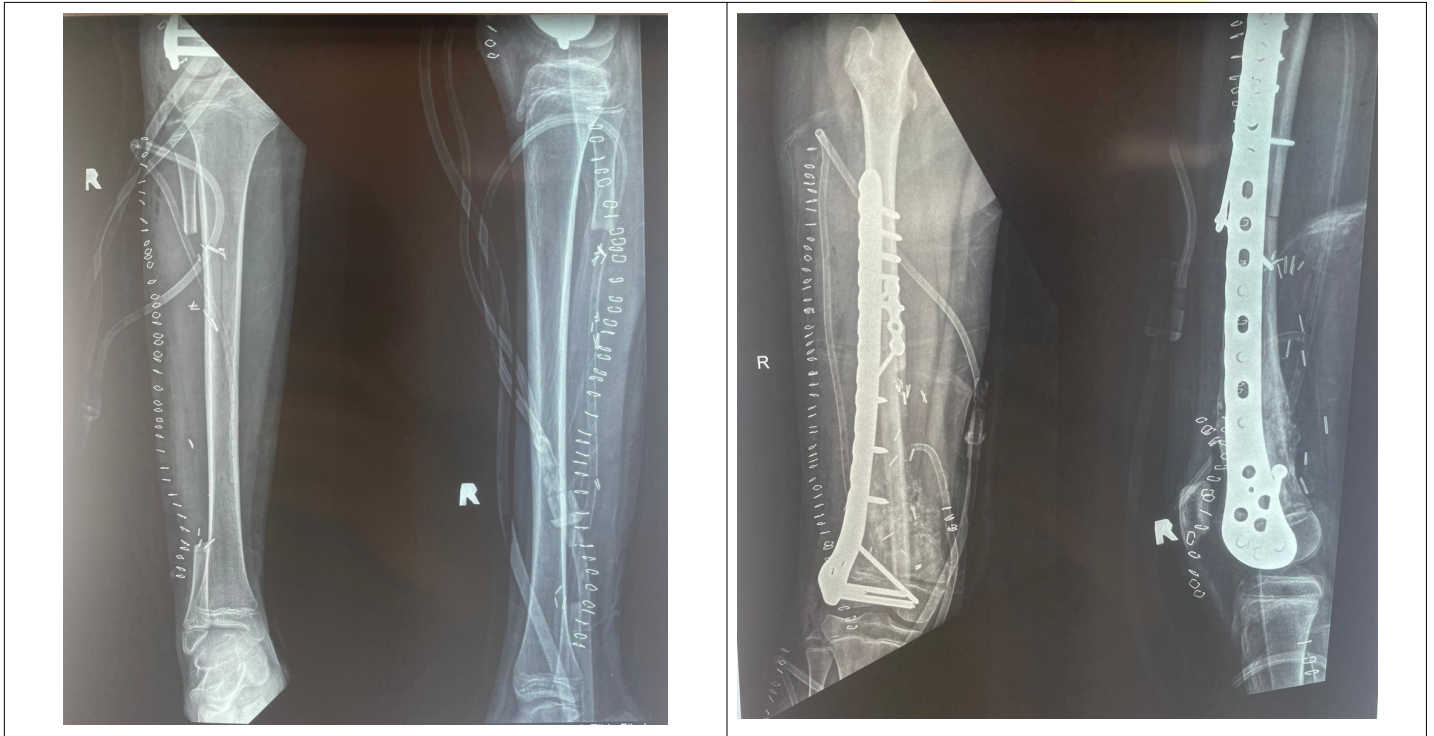


Findings:

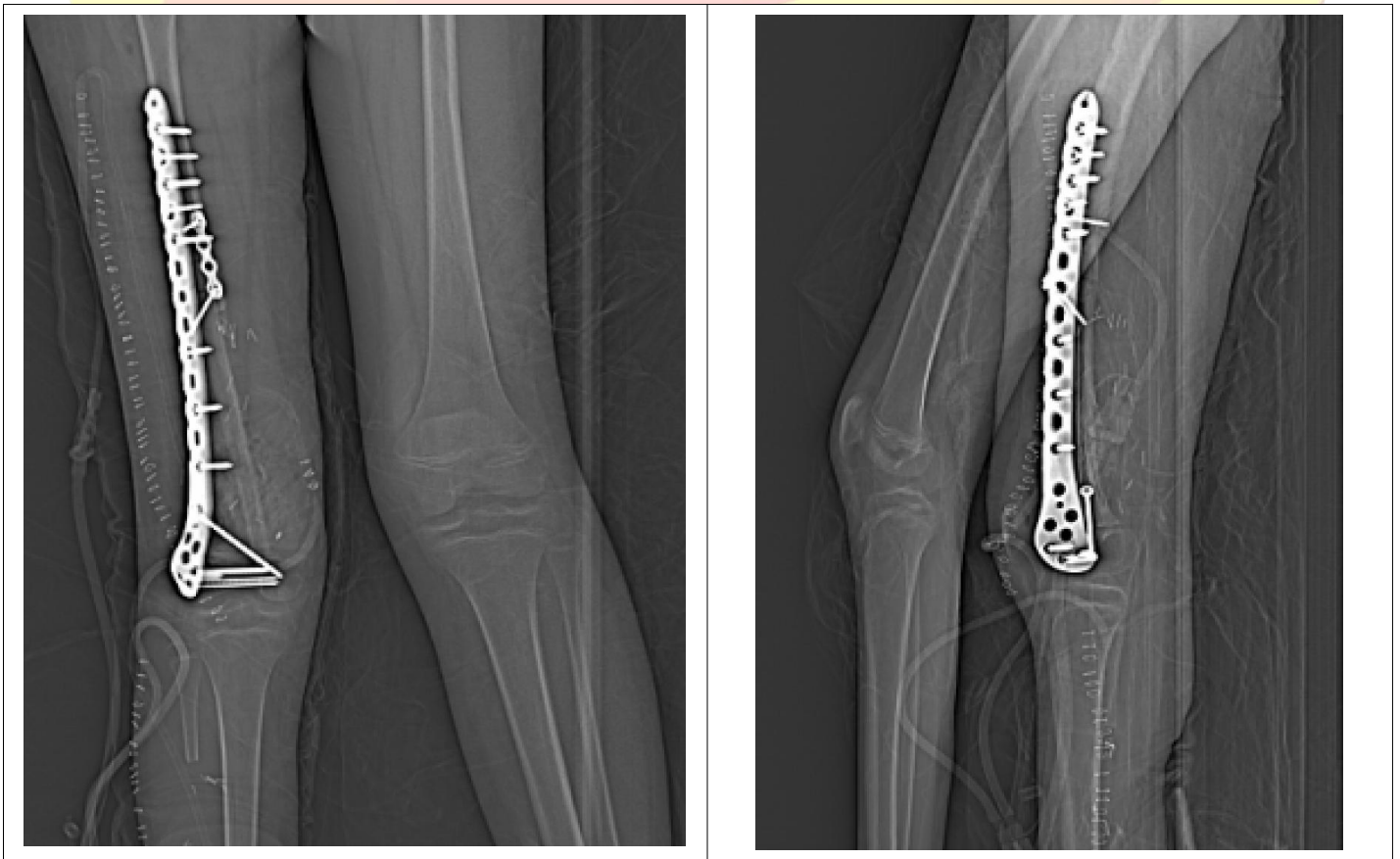
1	Under GA and EA, she was put in left lateral position, incision of about 25cm taken over the lateral aspect of the right thigh extending to knee joint, soft tissue dissected and tumor excised enbloc, with preserving of neurovascular structures, tumor resection done 16cm from the right knee joint line and distally trans-epiphyseal resection done.
2	The excised tumor bone subjected to ECRT and tumor debulked.
3	Right fibula vascularized graft was harvested and the ECRT bone and free fibular fixed to the distal femur with zimmer (LVM) lateral femoral distal plate (distal hexagonal screws, proximal star head screws)
4	Anastomosis of the free fibula achieved and haemostasis achieved.
5	Wound closed in layers and 3 drains placed. Sterile dressing done.

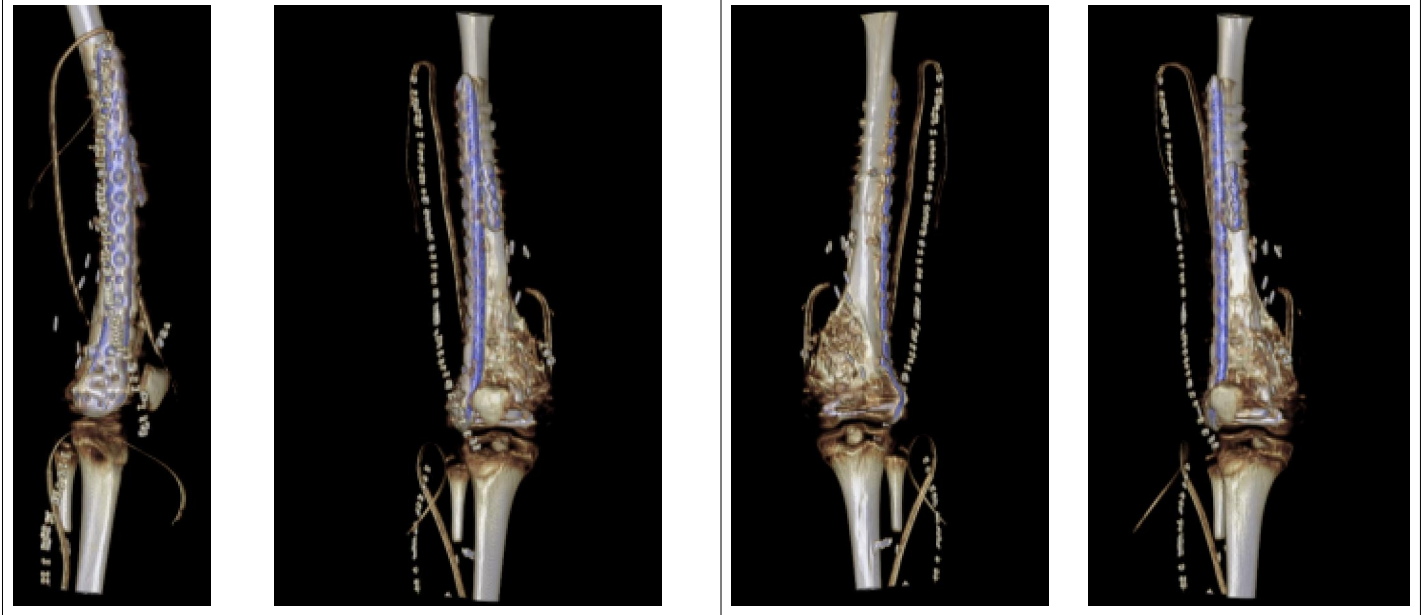


POST-OP X-Ray: 15/12/2022



POST OPERATIVE CT IMAGES: 19/12/2022





PHYSIOTHERAPY PROTOCOL:

At 4 weeks -

No walking.

CPM (Continuous passive motion for 20 mins) twice daily

0-45°

No active knee ROM (Range of movements)

Static Quadriceps exercises to be done with brace.

Passive hip abd-add in supine and passive SLR with brace to be done twice daily

At 6weeks

Non weight bearing walking with Walker

CPM 0-90°

No active knee ROM

Static Quadriceps exercises daily to be done. Hold for 10 counts 10 reps 3 sets to be done every 3 hrs

Hip ROM- active assisted with brace to be done twice daily

Check Xray - Thigh AP and Lateral view

At 8 weeks

CPM 0-90°

Active Quadriceps strengthening exercises and active Hip Rom exercises

Non weight bearing

At 12 weeks

Start partial weight bearing mobilisation with support of walker and Brace (30% weight bearing)
Active Quadriceps strengthening exercises
Try to achieve active ROM 0-120°
Check Xray of thigh AP Lateral views

From 12 weeks to 6 months

Walk only with support of walker and Brace.
Check Xray, MRI at 6 months of thigh AP and Lat

From 6 months

Can walk with walker. (50% weight bearing with brace and walker)
From 9 months complete weight bearing with brace and walker.
From 1-year complete weight bearing with brace and without walker.
(Brace has to be worn whenever walking till 18months)
Check Xray at 12 months

PROPOSED RECOMMENDATION AS DISCUSSED IN TYR MULTIDISCIPLINARY SARCOMA TUMOUR BOARD:

1	Discussion: The histopathology report is still pending; the case will be once again discussed in MDT once the pathology report is ready to determine further course of action regarding adjuvant chemotherapy needed.
2	To review once in 3 months for every 2 years and for every 6 months for next 3 years. Video consultation with Dr. Pramod every month with prior appointment.



OUR MDT TEAM MEMBERS:

NAME	DESIGNATION
Dr.Pramod Chinder	Consultant Orthopaedic Oncosurgeon
Dr Suraj H P	Orthopaedic Oncosurgeon
Dr. Anto	Clinical fellow- Orthopaedic Oncology
Dr. Amar	Clinical fellow- Orthopaedic Oncology
Dr. Rakshith	Clinical fellow- Orthopaedic Oncology
Dr. Narendra	Clinical fellow- Orthopaedic Oncology
Dr. Kunal	Consultant Oncopathologist
Dr. Aparna	Consultant Oncopathologist
Dr. Imran	Consultant Oncopathologist
Dr. Shivakumar	Consultant Radiologist
Dr. Kumaraswamy	Consultant Radiation Oncologist
Dr. Vikram Maiya	Consultant Radiation Oncologist
Dr. Vijay Agarwal	Consultant Medical Oncologist

OUR TEAM MEMBERS:

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Dr. Amar	Fellow- Orthopaedic Oncology	
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Mrs. Kavya	MSW	9632971901
Mrs. Veena	Coordinator	9148663925

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Checked by: Dr.Pramod.S.Chinder