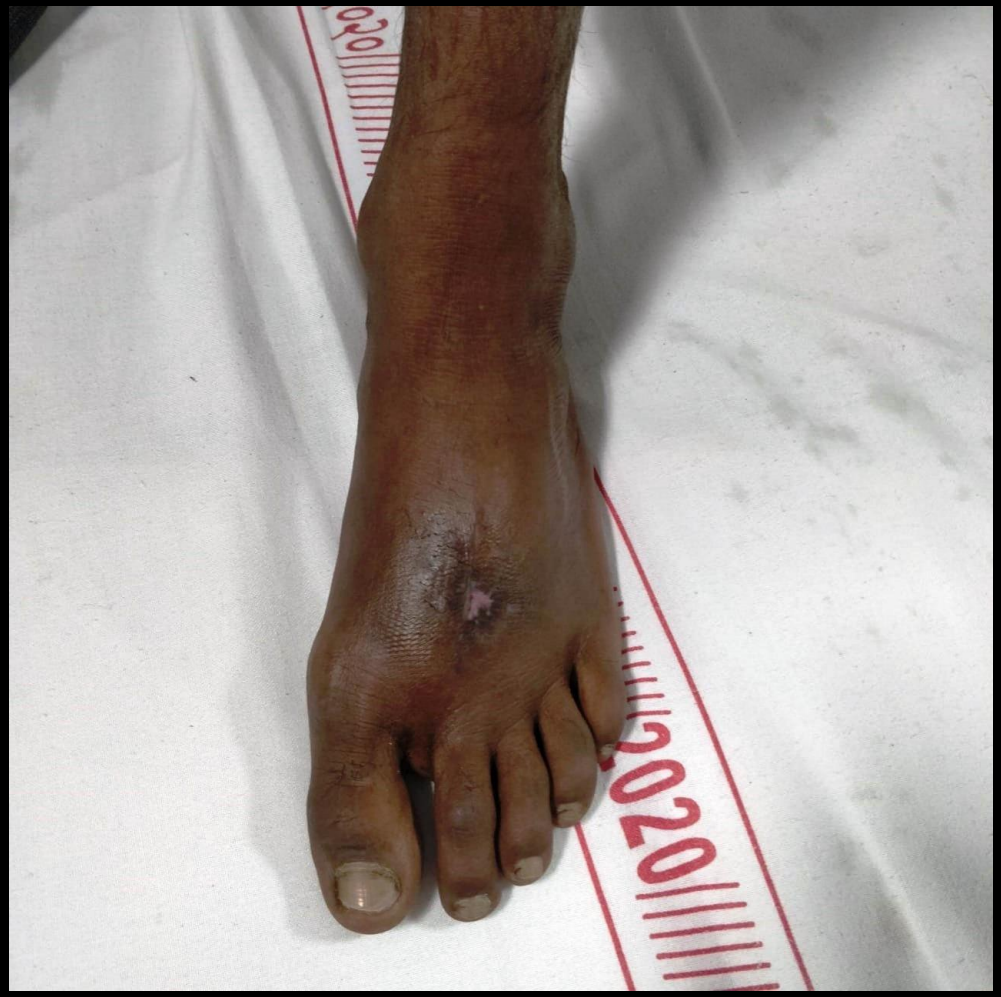
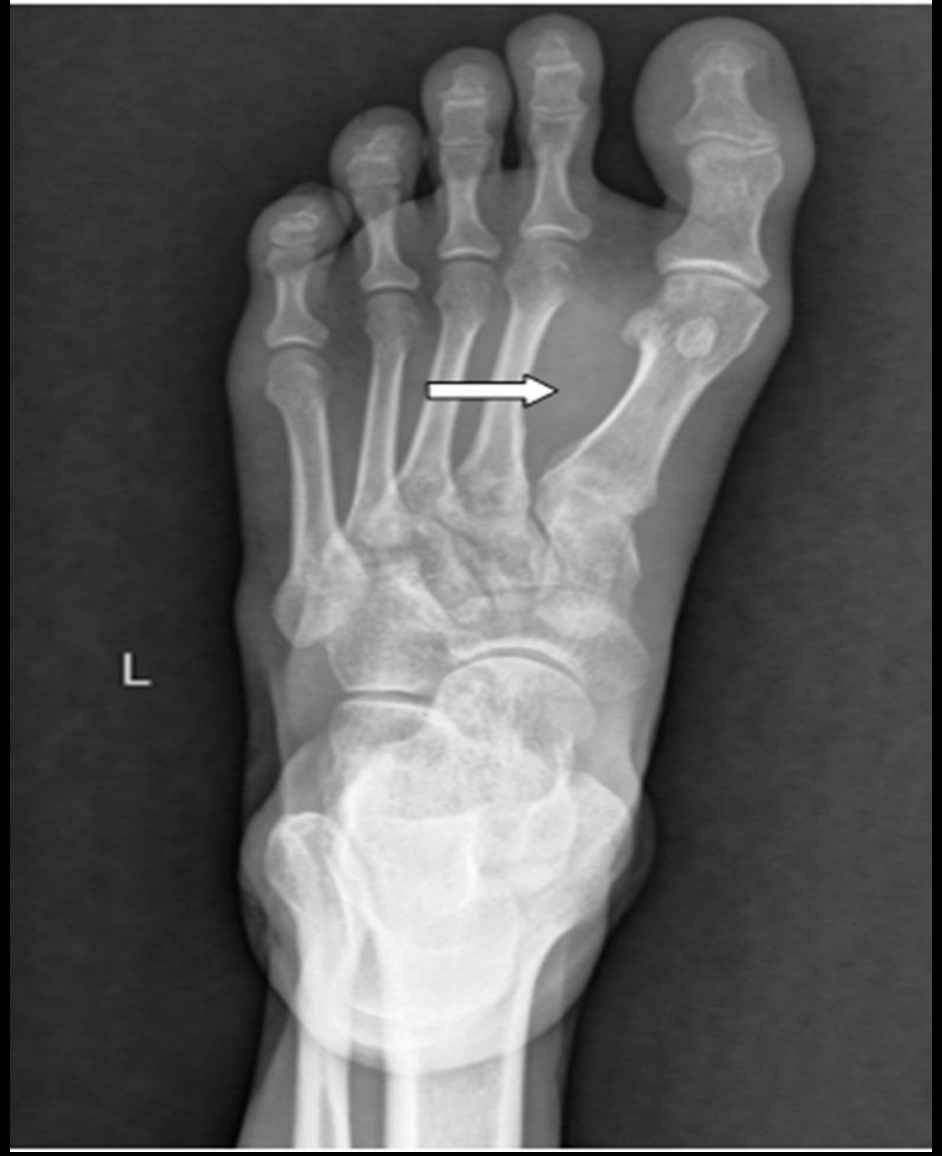
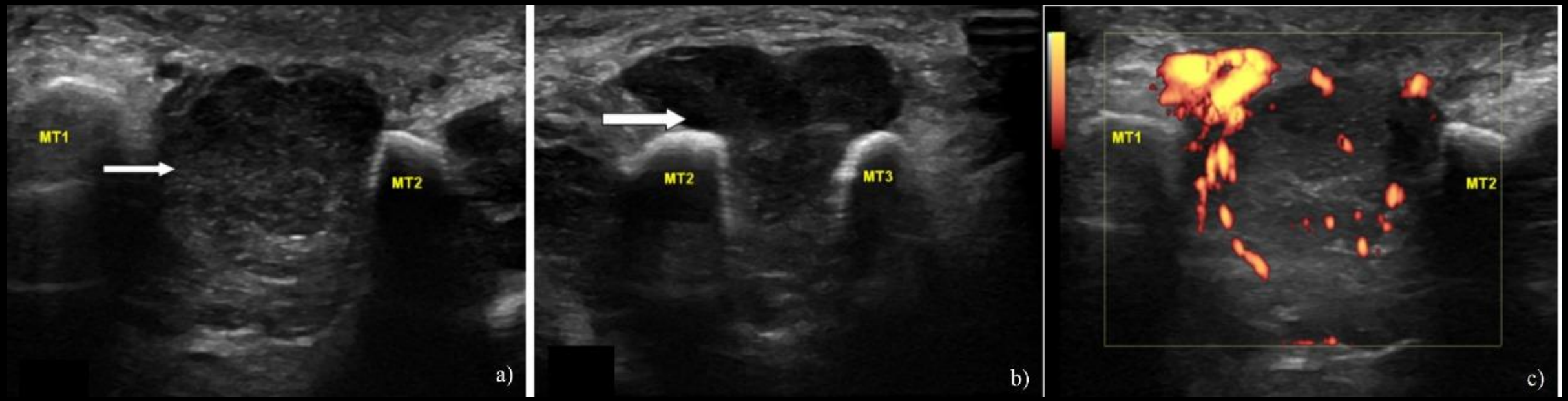
MICOD –05/07/2024
Case contributor – Dr. Sonal Saran

46-year-old male presented with a history of gradually progressive swelling and pain in the left foot for 2 years. The patient denied any history of trauma and any significant past medical or surgical history.



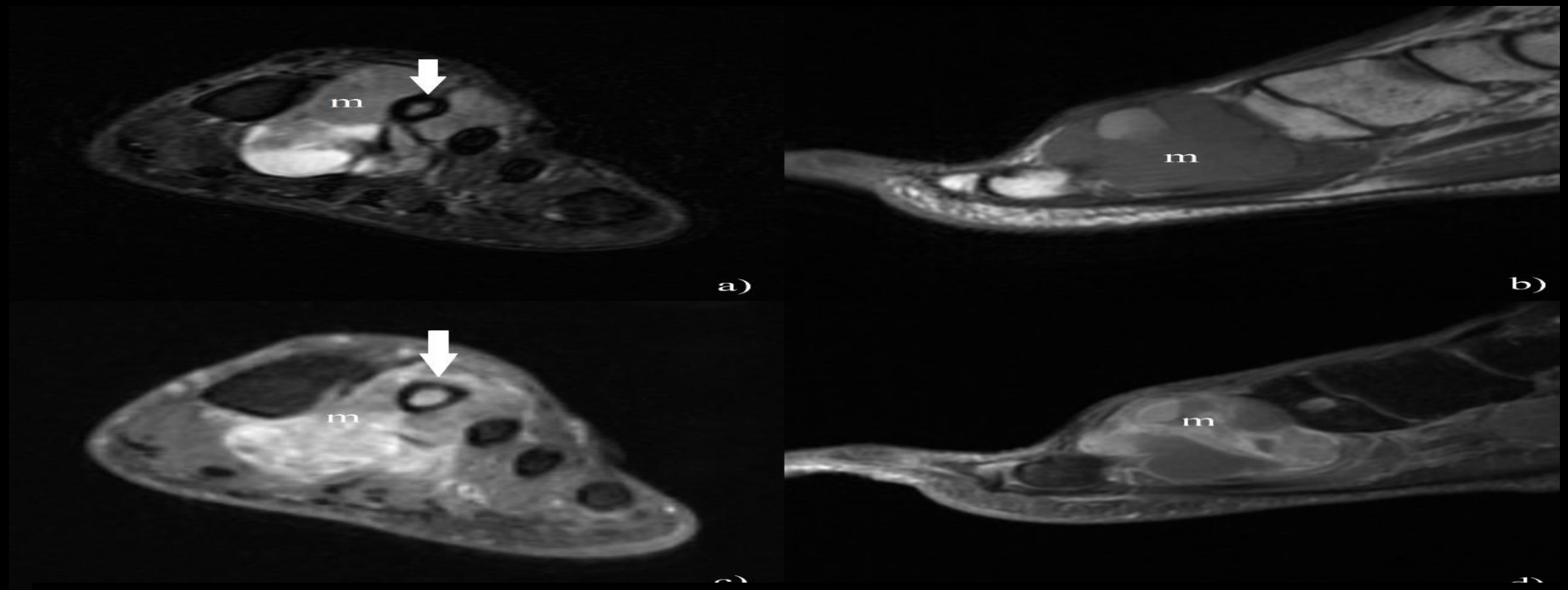


Conventional radiograph of the foot showed soft-tissue swelling involving the first intermetatarsal space with scalloping of the first and second metatarsals. There was no sclerosis or lysis of adjacent bone, and there was no calcification.



High-frequency ultrasound of the foot showed heterogeneously hypoechoic predominantly solid lobulated mass lesion measuring approximately 6 cm × 4 cm with ill-defined margins in the first and second intermetatarsal spaces with high vascularity on Power Doppler.

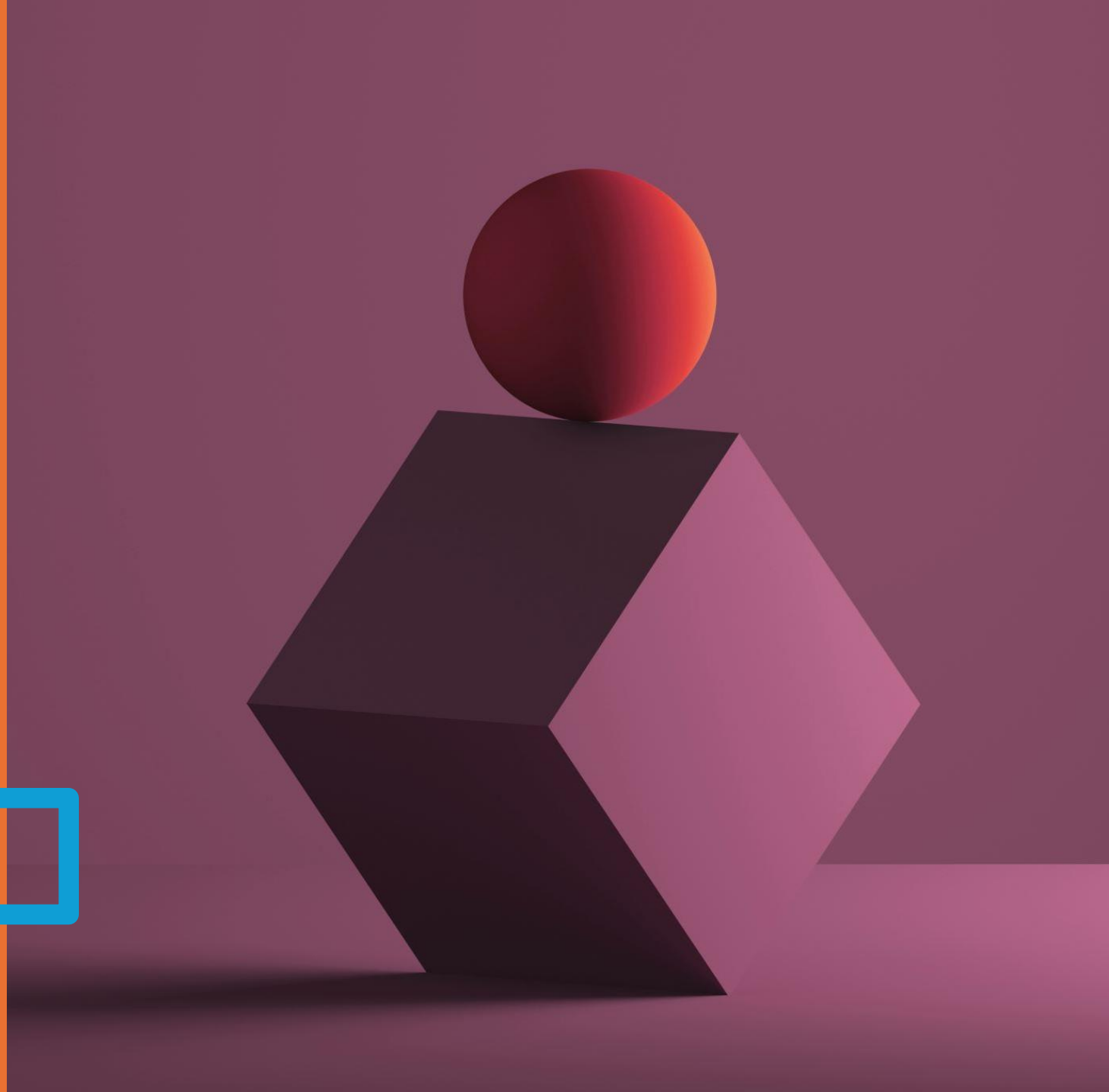
A provisional diagnosis of soft-tissue sarcoma of the left foot was made, and for further confirmation of the diagnosis and to see the extent of mass, magnetic resonance imaging (MRI) of the foot was performed.



- MRI of the left foot showed large lobulated solid cystic mass lesion measuring approximately 6 cm × 4 cm × 2 cm in the first and second intermetatarsal spaces. The lesion showed mixed signal intensity appearing predominantly hypointense on T1-weighted sequence and hyperintense on T2-weighted sequence.

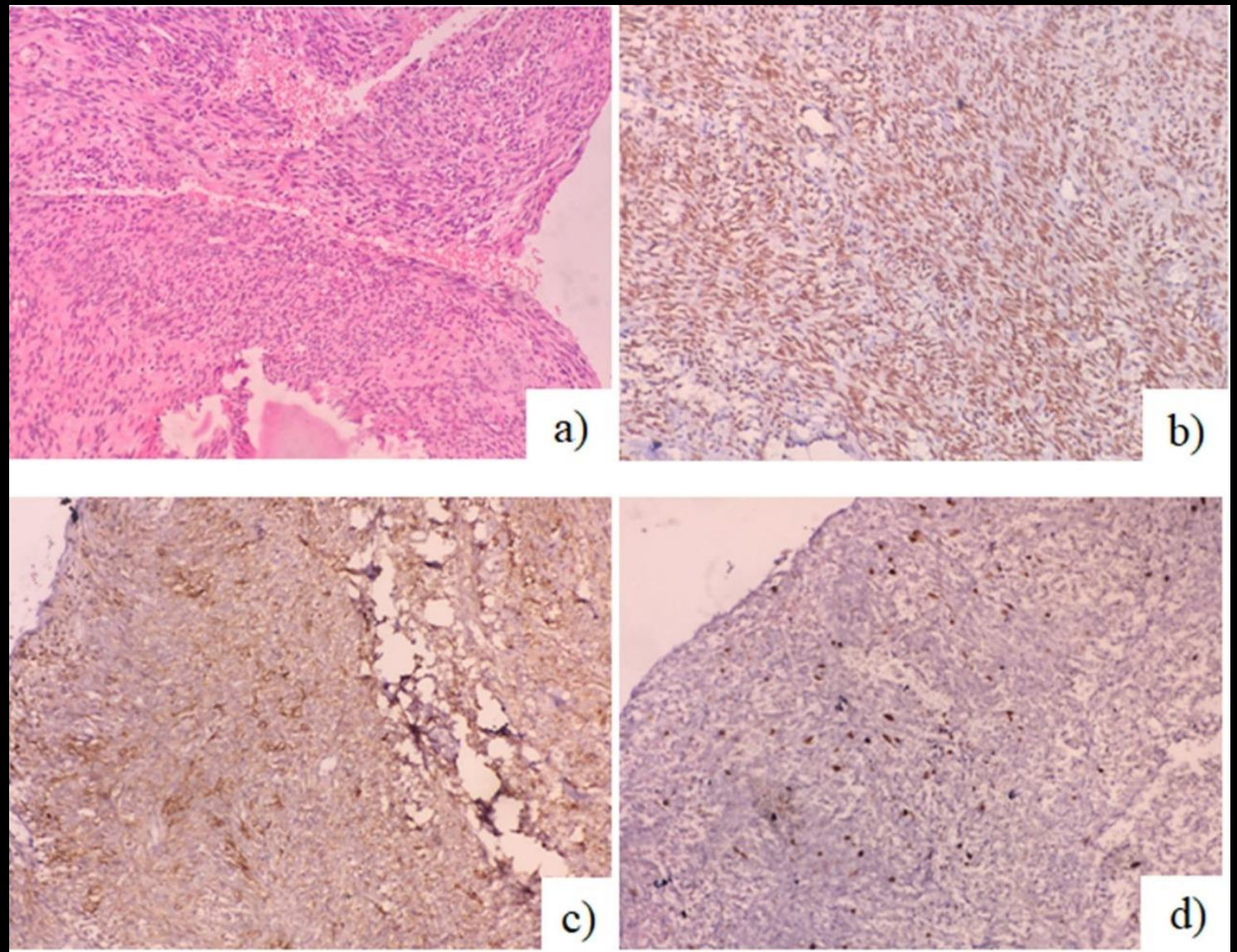
- The cystic component of the lesion showed fluid-fluid level within it. The lesion was encasing the second metatarsal bone with infiltration; and, the lesion showed significant postcontrast enhancement.

Diagnosis??



Soft-Tissue Mass Lesion of the Foot - Synovial Sarcoma

The patient underwent an excisional biopsy, which showed features of biphasic synovial sarcoma.
The metastatic workup of the patient was negative. The patient is kept on neoadjuvant chemotherapy, on the completion of which a radical surgical excision is planned.



- Synovial sarcoma arises from mesenchymal tissue and then undergoes differentiation to exhibit the histological appearance of the synovium.
- It is the third most common soft-tissue sarcoma in adults constituting approximately 10% of all soft-tissue sarcomas.
- Men and women are equally affected.
- It is seen in adolescents and adults with ages ranging from 15 to 40 years.
- Three main histological subtypes of synovial sarcoma have been identified: biphasic, monophasic, and poorly differentiated.

- Most of the patients present with deep-seated swelling surrounding a large joint, most commonly the knee.
- Mostly, tumors are larger than 5 cm at the time of presentation.
- Some patients may present with pain, tenderness, and restricted movement of the adjacent joint.
- The lesions are most commonly seen in the extremities (lower >upper), in periarticular locations close to a bursa or tendon sheath instead of involving the joint proper.
- Approximately 18% of all synovial sarcomas occur in the foot and ankle

DIFFERENTIAL DIAGNOSIS

- Hemangioma appears as multiple high signal intensity lobules on T2-weighted images due to cavernous or cystic vascular spaces containing stagnant blood.

- Punctate or reticular low-signal-intensity areas may be present, representing fibrous tissue, fast flow within vessels, or foci of calcification.

- Lack of vascular channels and phleboliths ruled out hemangioma in our case.

- Neurofibromas are characterized by fusiform enlargement of the nerve, with the tapered ends of the lesion toward the parent nerve.

- Neurofibromas show few characteristic signs on imaging such as target sign, fascicular sign and split fat sign, and thin T2-weighted hyperintense rim.

- No continuity with any nerve and absence of any of the abovementioned signs ruled out the diagnosis of neurofibroma.

- Giant cell tumor of tendon sheath presents as a well-defined mass eccentrically located in association with or partially/completely enveloping a tendon.

- They characteristically exhibit a low signal on T1-weighted images and T2-weighted images due to the presence of hemosiderin and exhibit homogeneous enhancement on postcontrast scan.

- The absence of low signal on T2-weighted sequence pointed against the diagnosis of tenosynovial giant cell tumor in this case.

- Among malignant tumor, liposarcoma can be a differential; however, the absence of fat ruled out liposarcoma in our case.

THANK YOU