Case of the day : Case 5 - Mammo

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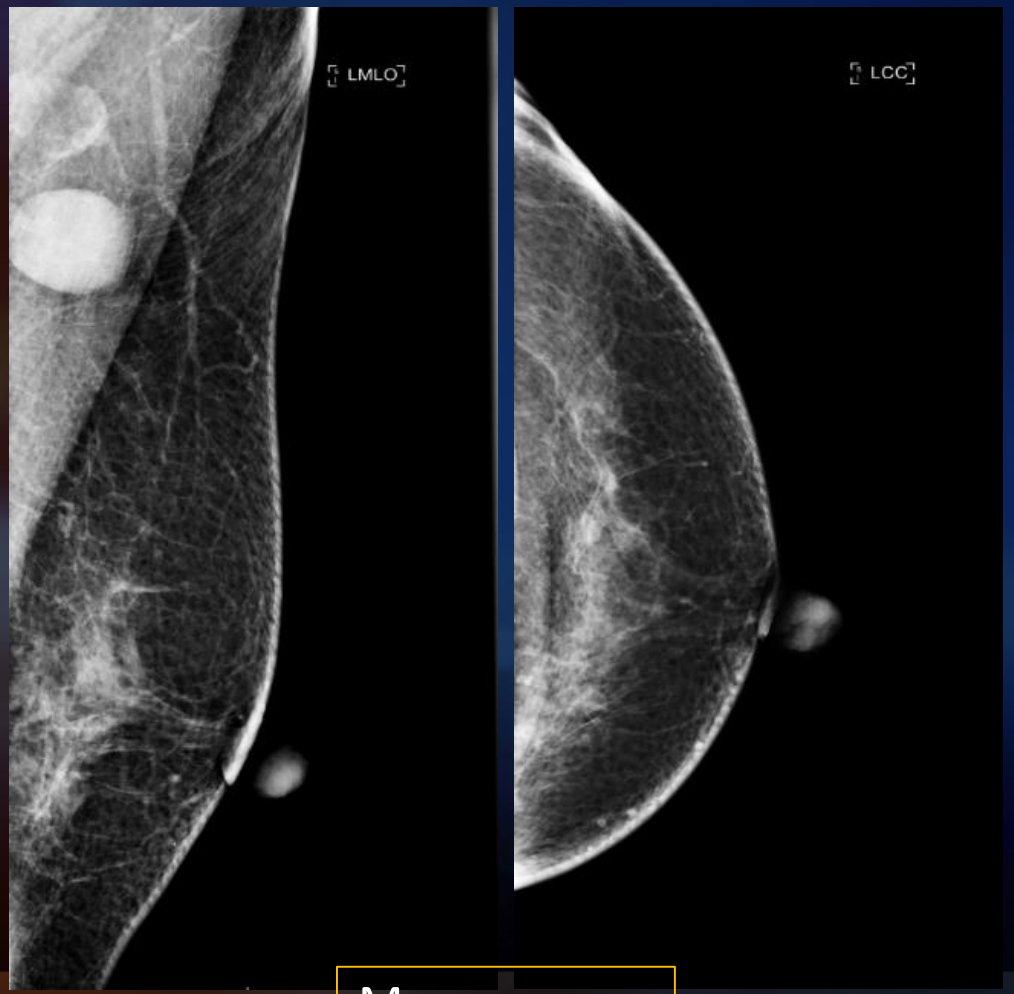
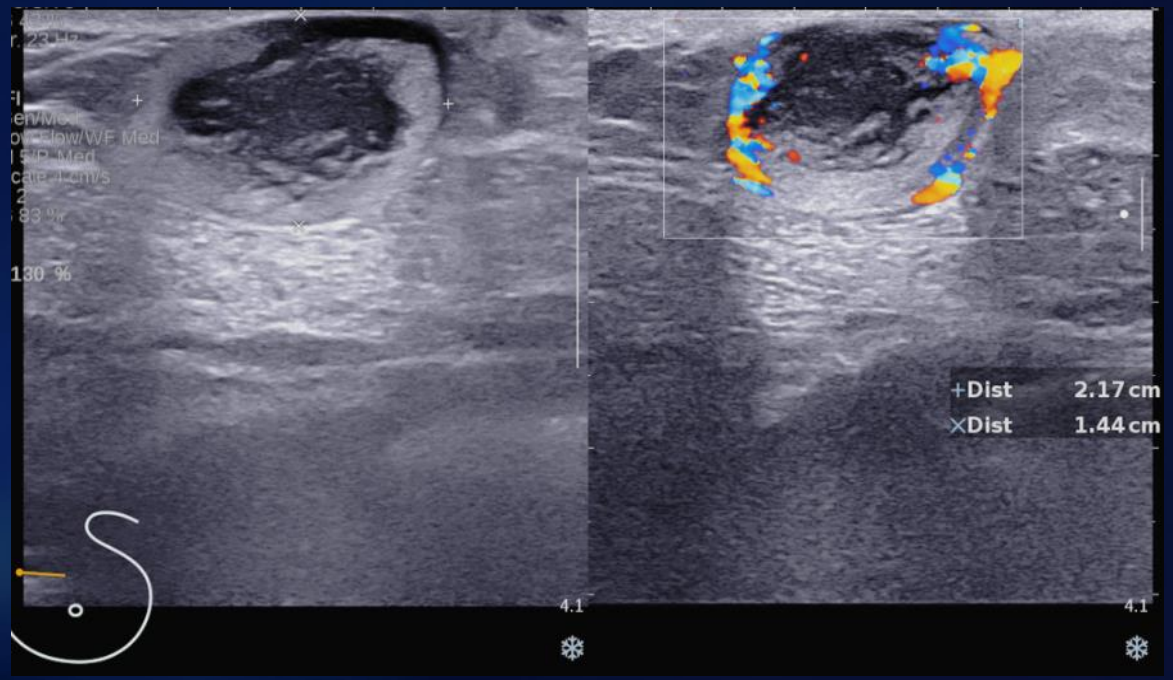
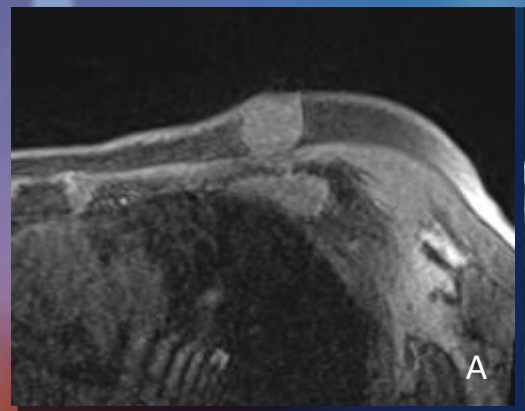
A 65-year-old female presented with a palpable mass at left upper inner quadrant, which has slightly increased in size for 6 months. The mass is located near the surgical scar from prior excision of a hemangioma for 20 years ago.

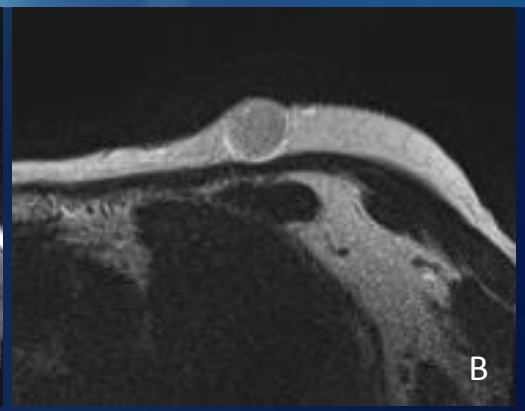


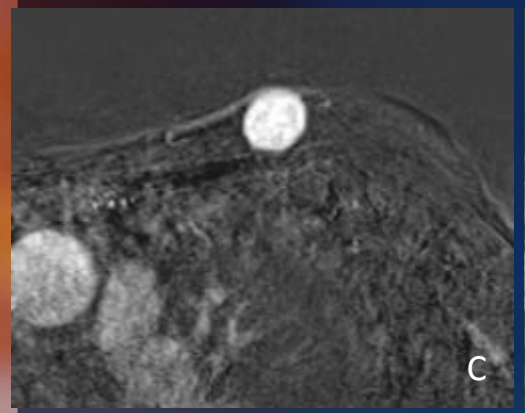
Mammogram

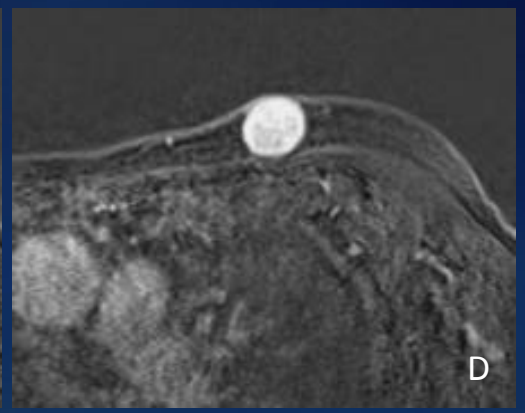


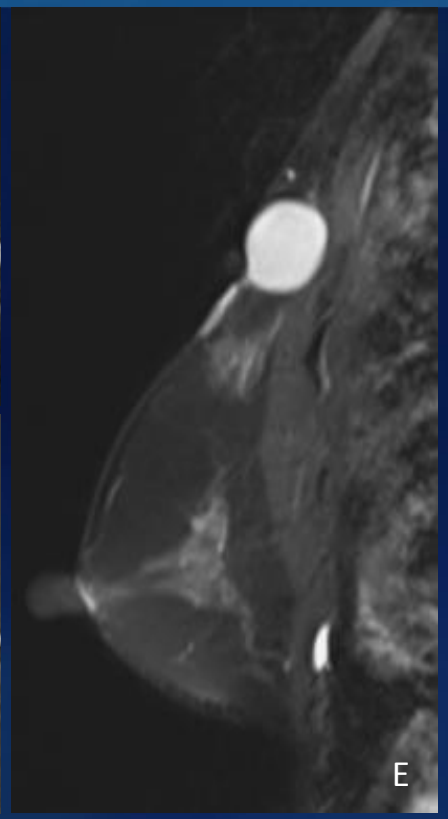
Ultrasound

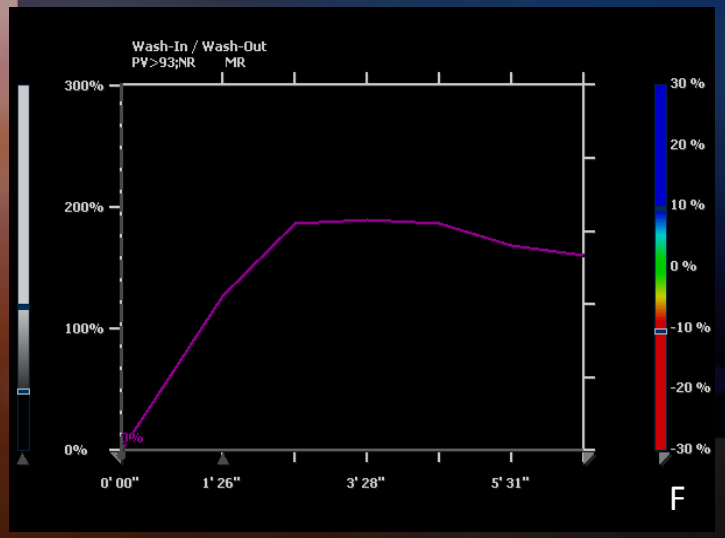


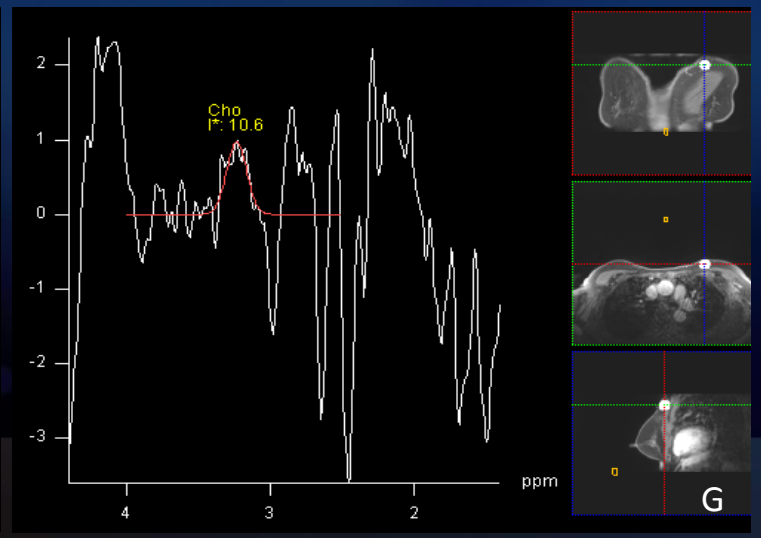












MRI

A) Axial T1W with FS

B) Axial T2W non-FS

C) Axial post-contrast T1W with FS in early phase

D) Axial post-contrast T1W with FS in delayed phas

E) Sagittal T2W with FS

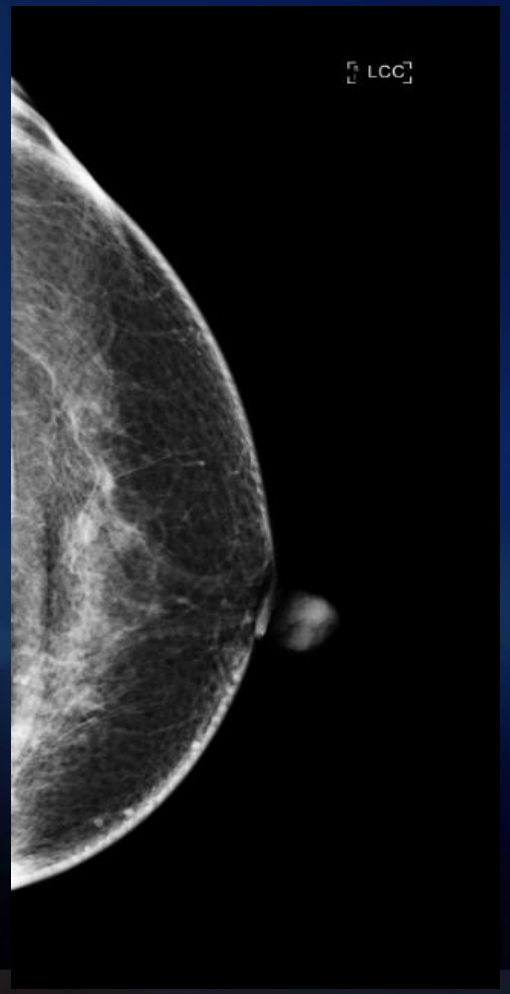
F) Kinetic curve assessment

G) MR spectroscopy

What's the most likely diagnosis?

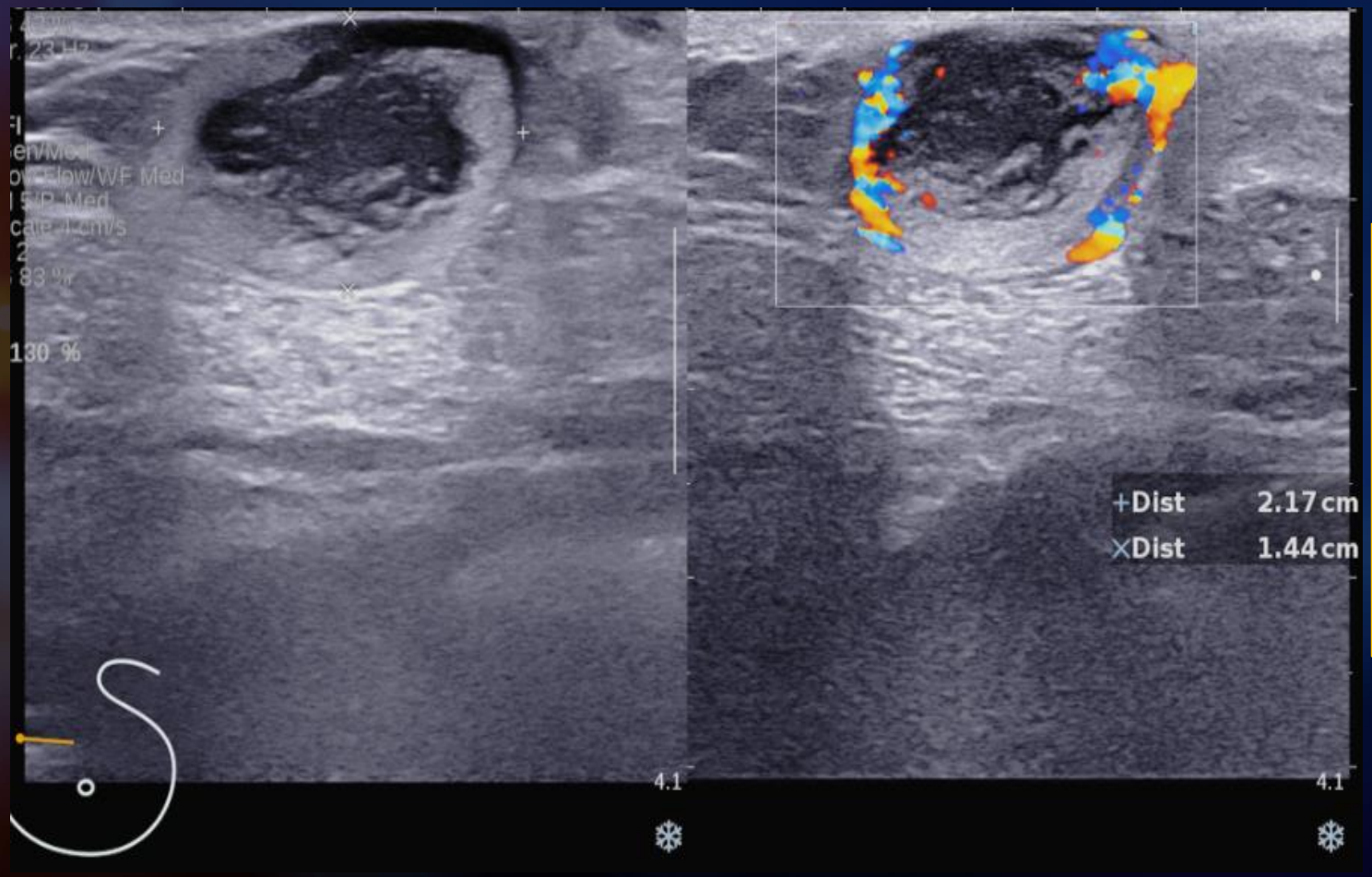
A) Hemangioma
B) Angiolipoma
C) Hypervascular metastasis
D) Dermatofibrosarcoma protuberans
E) Partially-thrombosed pseudoaneurysm

Mammographic Findings



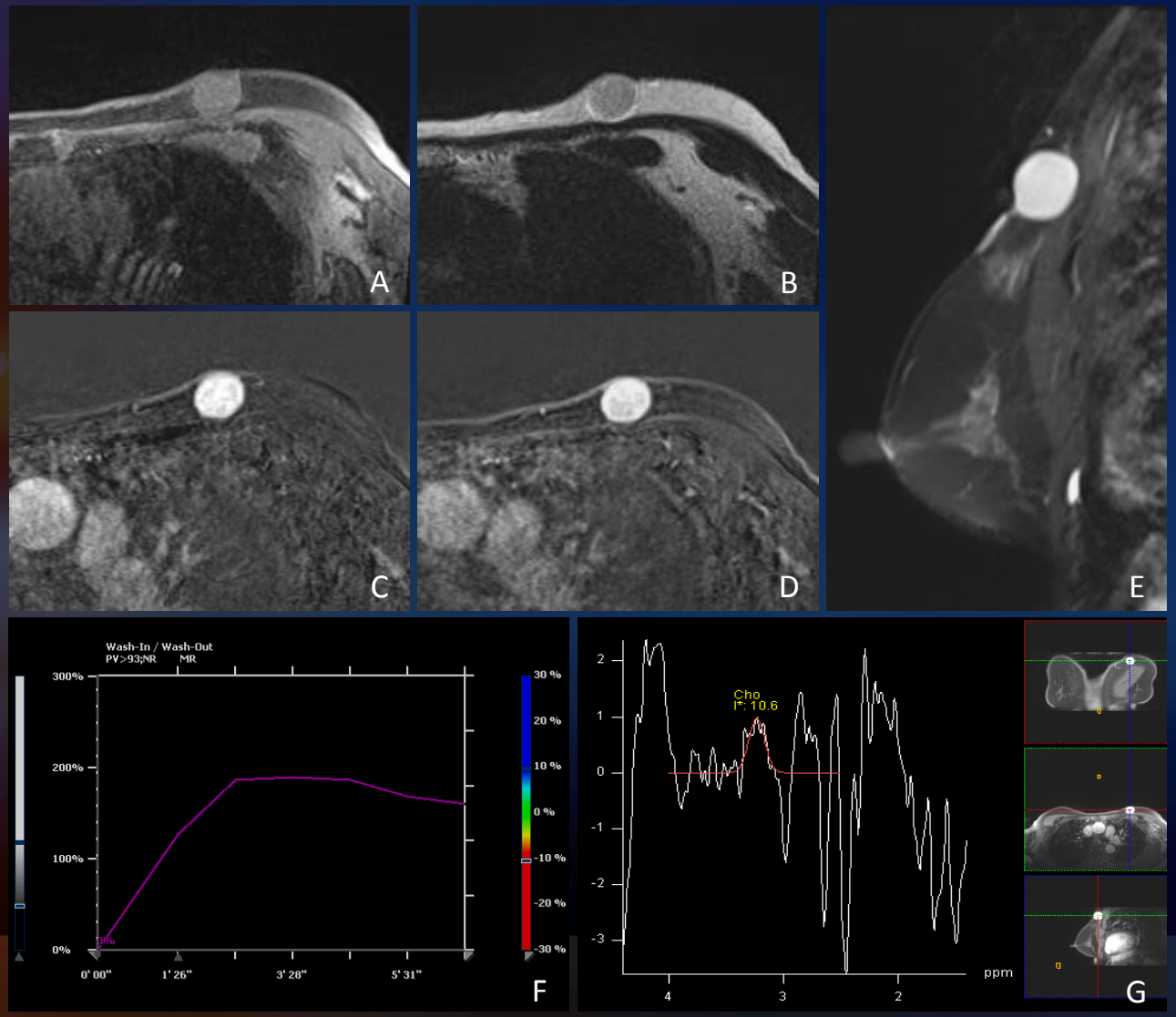
A circumscribed round high density mass at upper part of the left breast seen only on MLO view

US Findings



A circumscribed oval-shaped mixed hyperechoic and hypoechoic mass with vessels in rim in dermal-subcutaneous layer at left upper inner quadrant

MRI Findings



- A circumscribed round mass in dermal-subcutaneous tissue at left upper inner quadrant
- Iso-SI on T1W, high SI on T2W
- Homogeneous rapid initial enhancement and plateau enhancement on delayed phase (type II kinetic curve enhancement)
- Increased choline peak

BIRADS 4b: moderate suspicion for malignancy

DDx: Circumscribed hypervascular dermal-subcutaneous breast masses

- Hemangioma
- Angiolipoma
- Dermatofibrosarcoma protuberans
- Hypervascular metastasis
- Pseudoaneurysm

Final Diagnosis

S/P Wide excision

Pathology:

Dermatofibrosarcoma protuberans

Dermatofibrosarcoma Protuberans

- An uncommon fibrous subtype of sarcoma arising from the dermis and invading the subcutaneous tissue
- Intradermal-subcutaneous mass
- Mostly on the trunk and extremities but rarely occurs in the breast
- Locally aggressive and high recurrence rate
- Need wide excision

Dermatofibrosarcoma Protuberans

- MMG: a circumscribed hyperdense mass without calcification or fat
- US: a circumscribed intradermal mass, heterogeneously hypoechoic (hypercellular tumor cells) with a wide hyperechoic zone (fibrous tissue), hypervascularity
- MRI: a circumscribed intradermal mass, iso-SI on T1W, high SI on T2W, intense early homogeneous enhancement

Hemangioma

- Benign vascular tumor, rarely in the breast
- Superficial location in subdermal to subcutaneous tissue
- MMG: a circumscribed oval isodense mass, +/- phleboliths
- US: mostly hypo-isoechoic but up to 33% hyperechoic, peripheral or central vascularity
- MRI: low SI on T1W, high SI on T2W, flow void, early homogeneous enhancement, fat replacement in involuting phase

Angiolipoma

- A benign variant of lipoma with vascular proliferation, rarely in the breast
- Typically in young adults
- Superficial location in subcutaneous tissue
- MMG: a circumscribed oval isodense mass
- US: circumscribed, homogeneously hyperechoic

Hypervascular metastasis

- Intramammary metastasis from a primary tumor in other sites of the body is very rare.
- Common primary tumors: melanoma, lymphoma, lung cancer, renal cell carcinoma, ovarian carcinoma, gastric cancer
- Mostly hematogenous route
- Circumscribed oval hypoechoic mass, rather superficial location, no secondary sign, solitary or multiple
- Rim or homogeneous enhancement, type II or III kinetic curve enhancement

Partially-thrombosed pseudoaneurysm

- Suspected in case of trauma to the arterial wall
- A pulsatile anechoic saccular lesion with variable echogenicity depending on the presence of intraluminal thrombus and stage of the thrombus
- Color Doppler: yin-yang sign in aneurysmal sac, turbulent blood flow, to-and-fro spectral waveform in the neck of pseudoaneurysm