

BMUS)))

Tissue Sampling

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Tissue Sampling

Differentiating benign from malignant pathology

Confirm diagnosis

Guide management and treatment planning

Support staging

Enable molecular and cytological analysis

Tissue Sampling

Why ultrasound guidance?

Real-time visualisation

Good soft tissue resolution

Minimally invasive and well tolerated

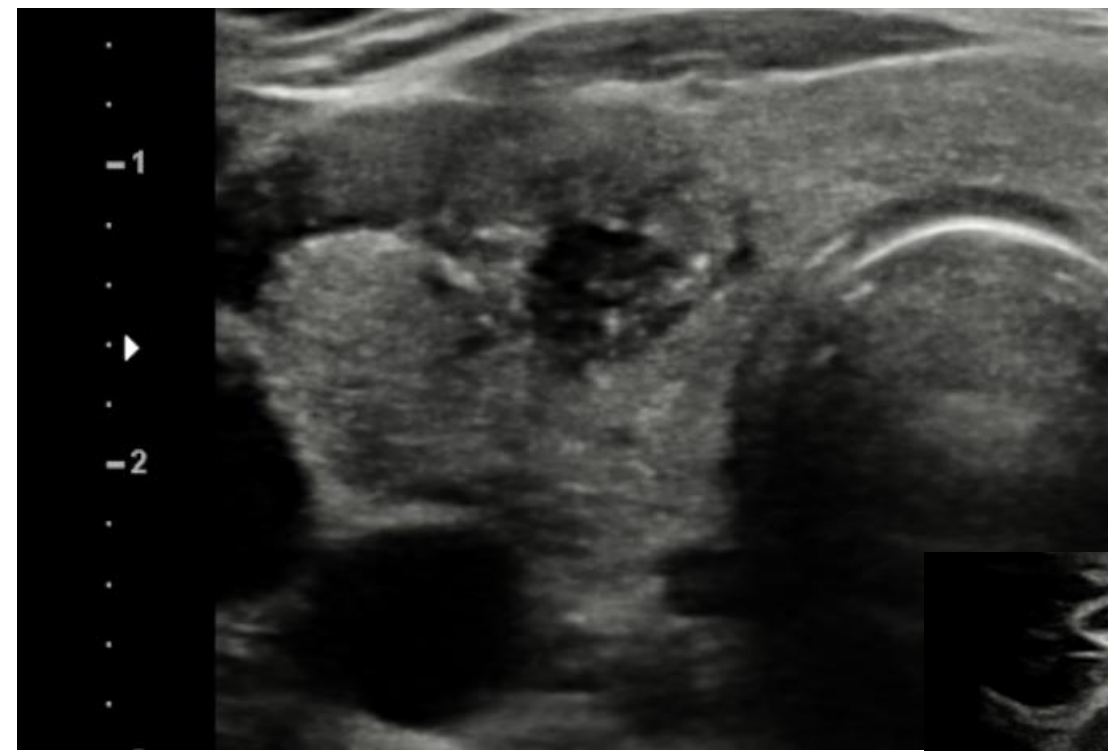
Accurate anatomical assessment:

reduces procedural complications

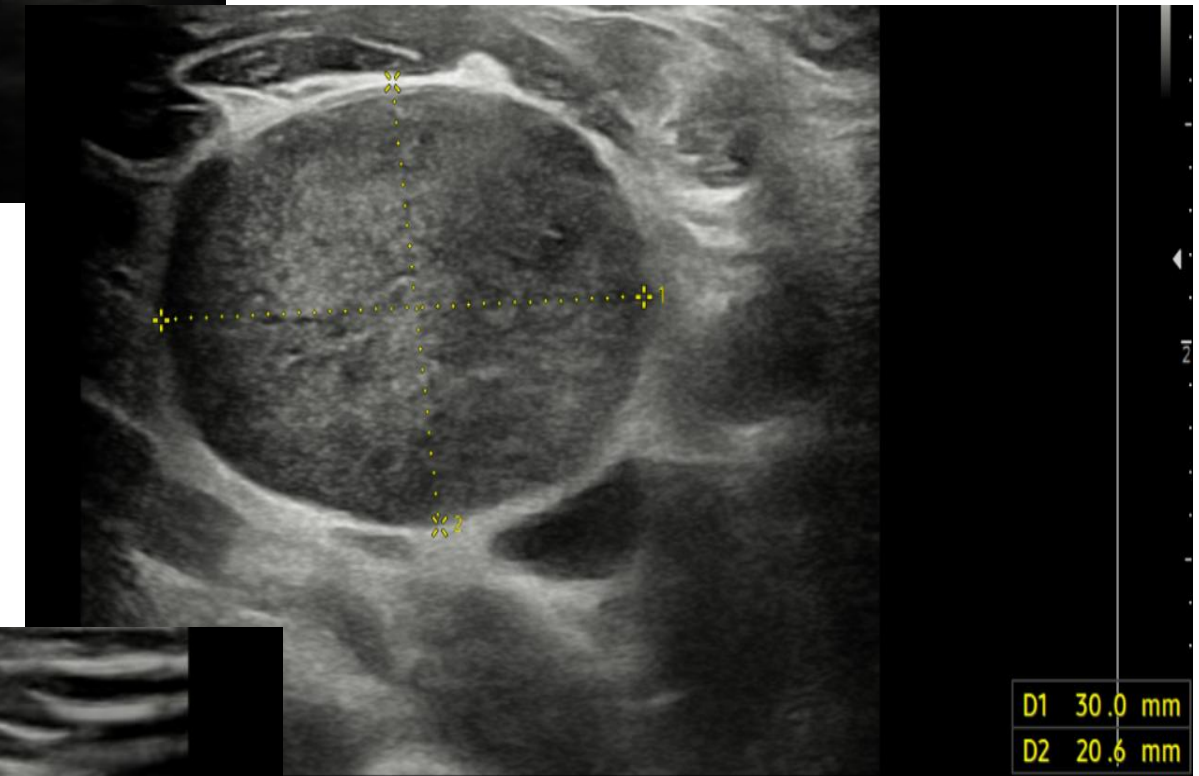
improves sampling accuracy and diagnostic yield

Follow local protocol and governance frameworks

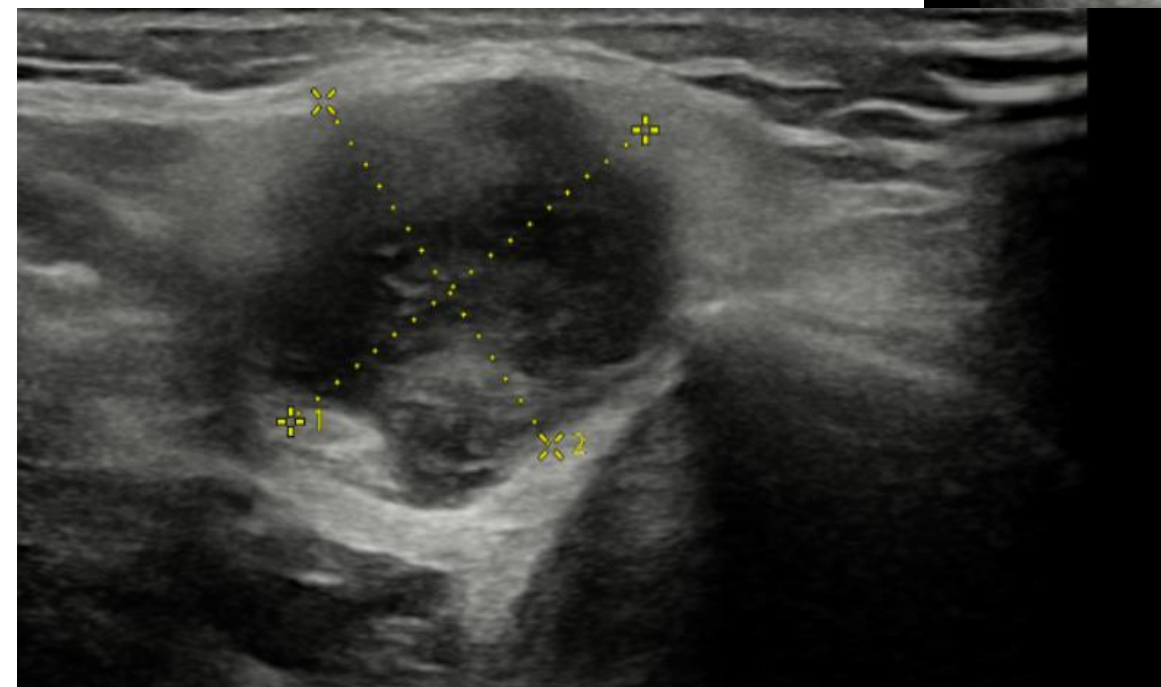
- **Thyroid nodules**



- **Cervical lymphadenopathy;**
 Suspected metastatic disease
 Suspected lymphoma



- **Salivary gland lesions**



- **Infection or abscess**

Importance of Sample Quality

Aim: To achieve a high-quality sample using good technique

Clinical Benefits:

Sample quality directly impacts the success of genetic and molecular testing.

for example: P-16 positive squamous cell carcinoma.

Faster diagnosis

Earlier commencement of appropriate treatment

Risk reduction:

Bleeding

Infection (aseptic technique)

Pain

Vasovagal episodes

Nerve injury (rare)

Decision-making: choosing the best sampling approach

Key questions:

Is sampling required?

What is the most appropriate technique: FNA or core biopsy?

Practice considerations:

Follow local protocol and governance frameworks

Pre-procedure assessment:

Assess lesion characteristics

Target viable solid areas and avoid cystic or necrotic areas

Consider locations, size, and suspected pathology

Patient and safety considerations:

Informed Consent

Aseptic technique

Clear communication, reassurance and patient comfort

Cytology (Fine Needle Aspiration-FNA)

- Technique:

- Needle and syringe

- Minimally invasive

- Quick to perform

- Advantages:

- Low complication rate

- Cost-effective

- Well tolerated

- Limitations:

- Limited tissue architecture

- Risk of non diagnostic samples

- Practical considerations:

- Continuous visualisation of the needle tip

- Awareness of adjacent anatomical structures (eg: vessels)

- Common indications:

- Thyroid nodules

- Salivary gland lesions.

- On-site cytology evaluation

Histology (Core Biopsy)

Technique:

Core biopsy needle under local anesthetic

Requires Patient Group Direction (PGD)

Compared with FNA:

More invasive

More technically demanding

Slightly higher complication risk (overall risk remains low)

Advantages:

Preserves tissue architecture

Enables immunohistology and molecular/generic analysis

Supports diagnosis and personalized treatment planning

Practical considerations:

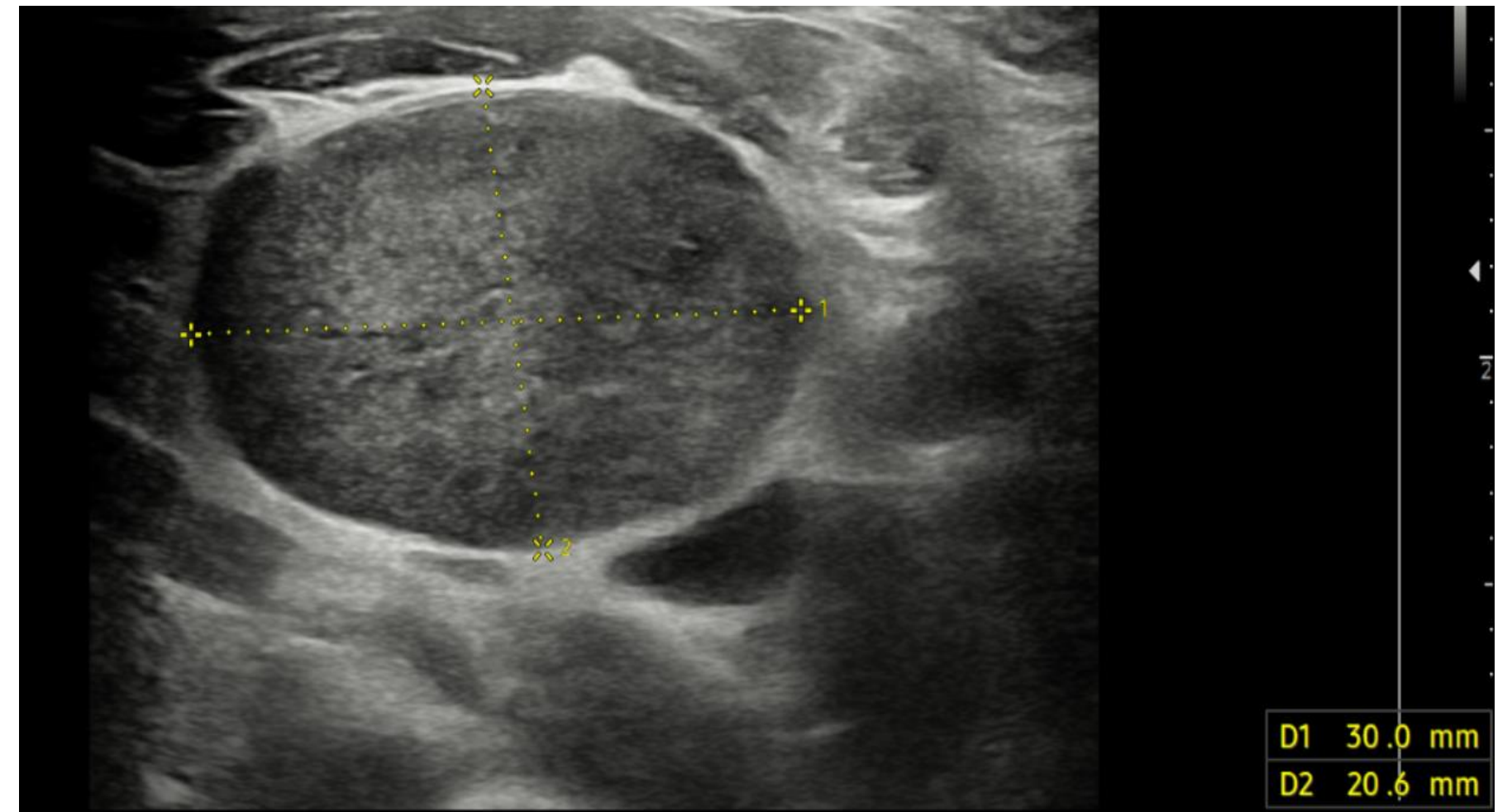
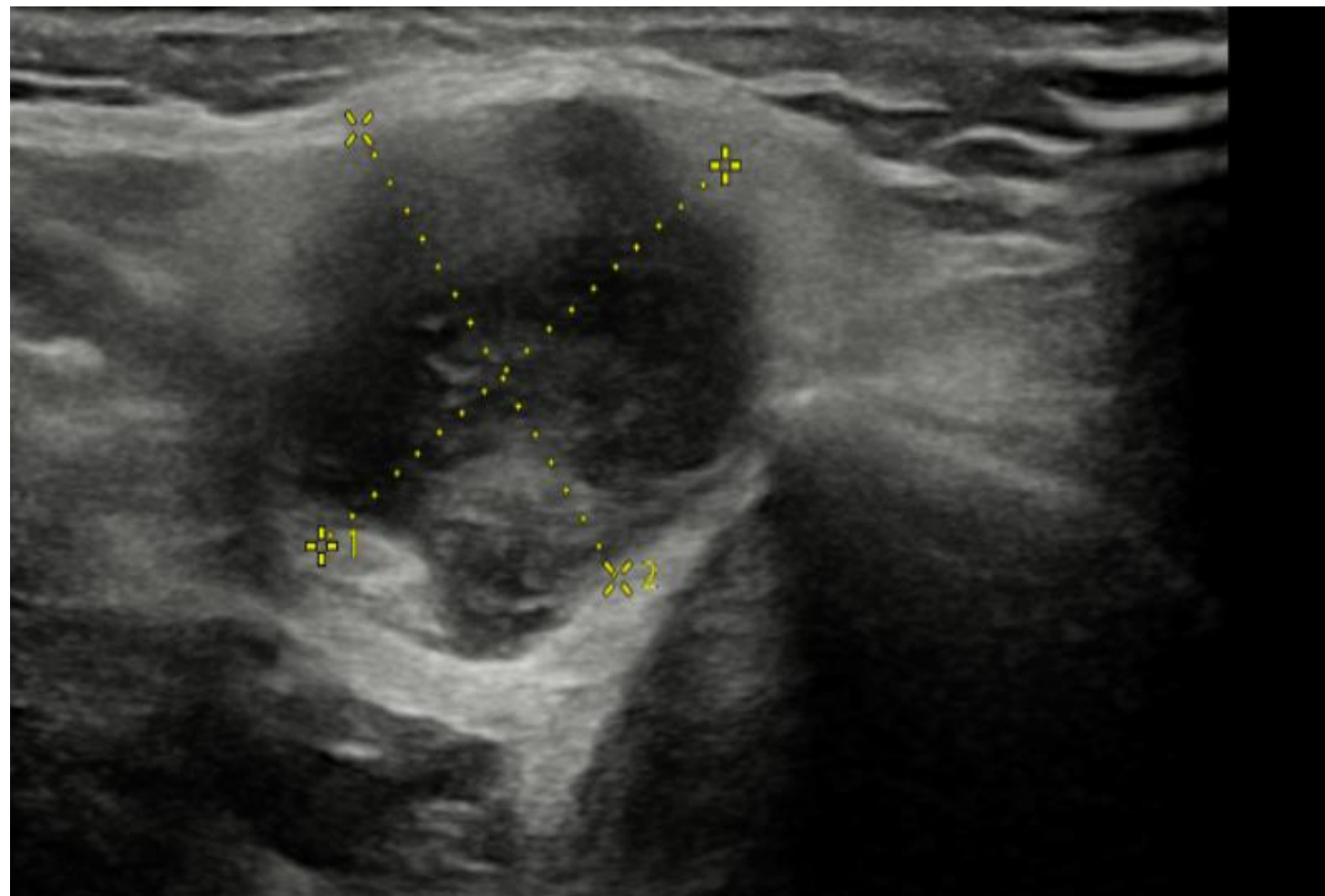
Essential to visualise the needle tip and adjacent anatomical structures (eg: vessels) throughout the procedure

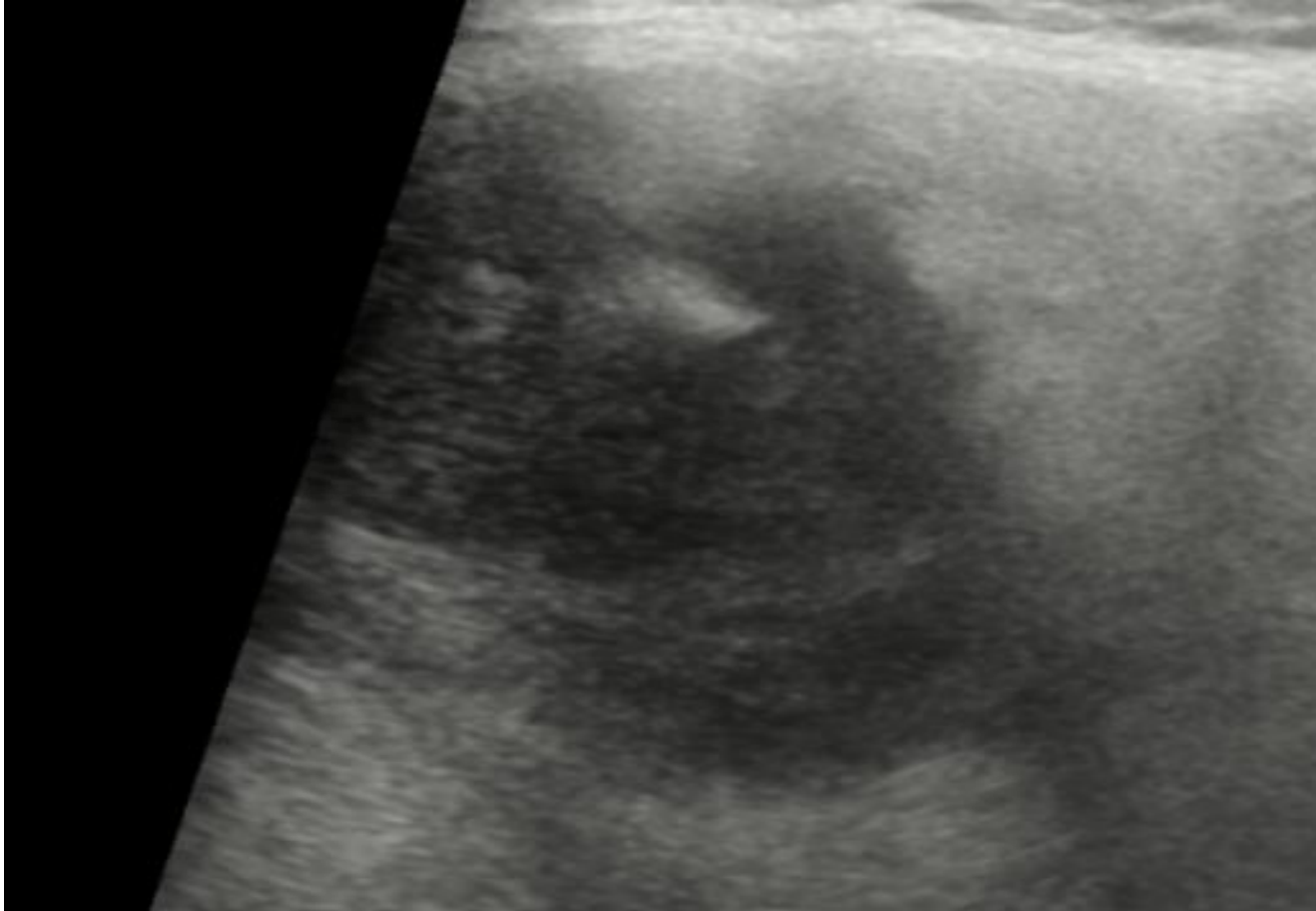
Particularly useful for Lymphoma

Cases to discuss.

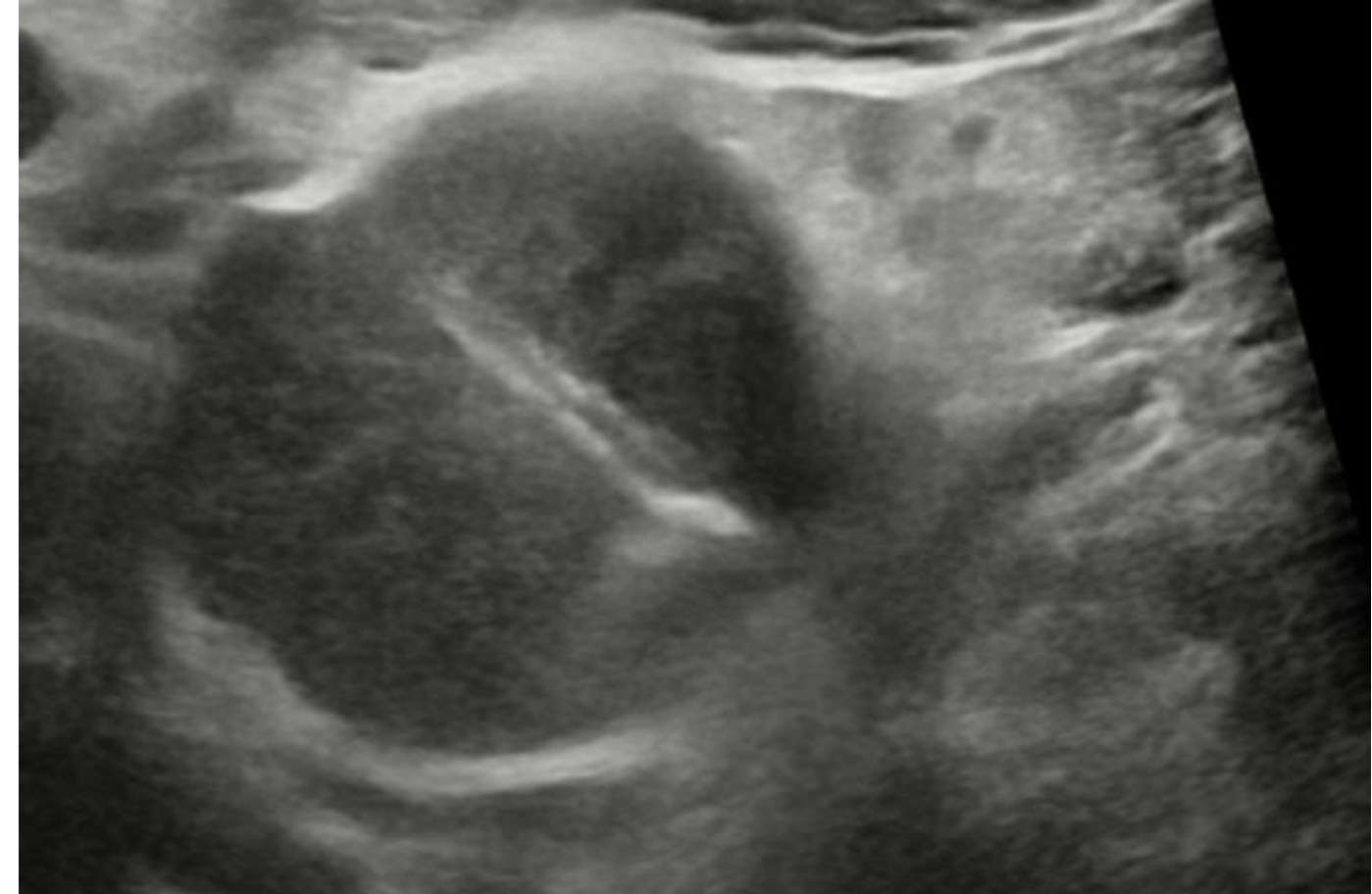
Case 1

67 year old male presented with right-sided parotid area lump for a year, gradually increasing in size. No night sweats or weight loss. Skin over area appears normal. Oral cavity appears clear ? Nature of lump





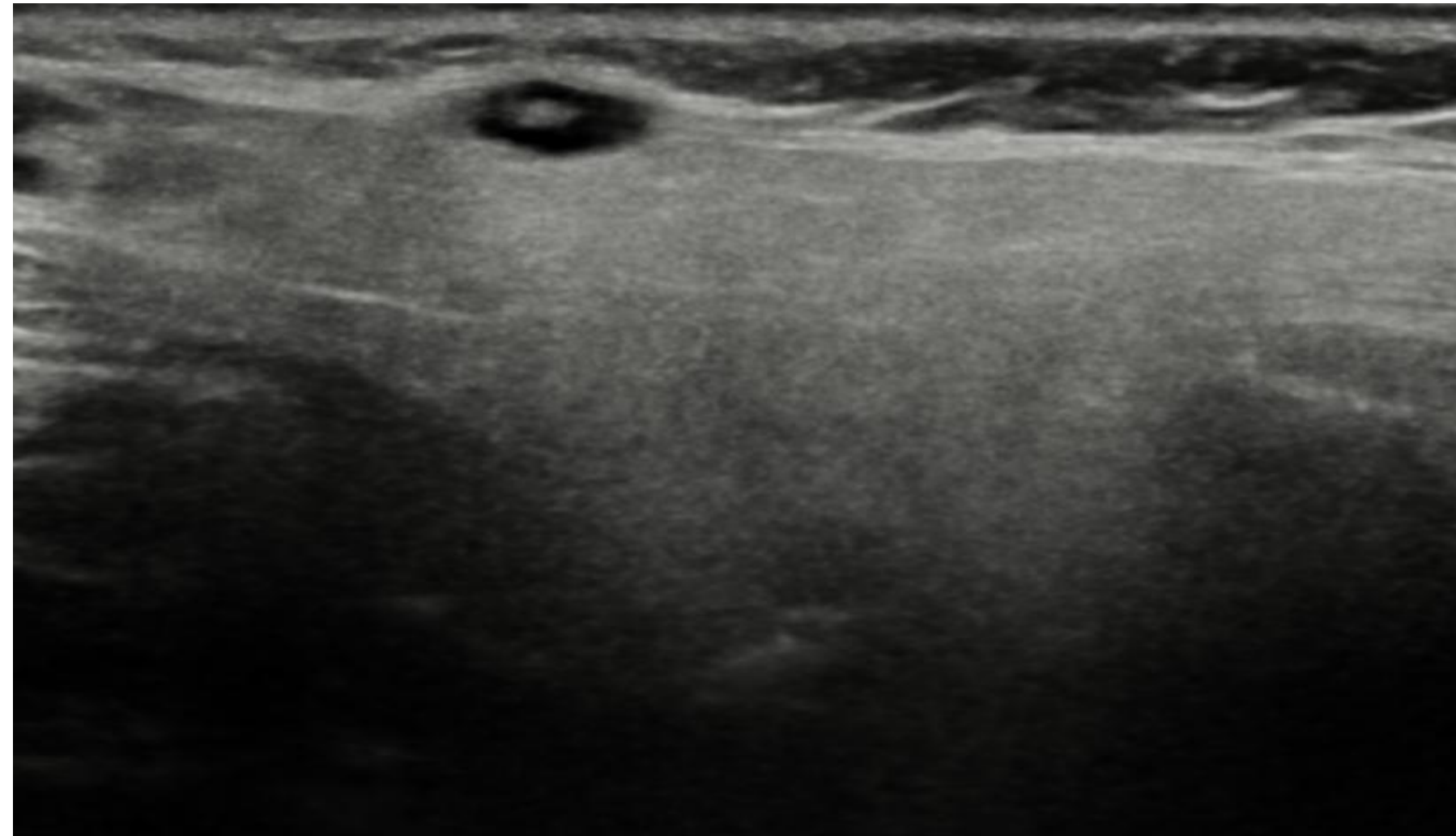
No excess lymphoid cells seen to suggest Warthins tumour. Malignancy should be considered – advise MDT discussion

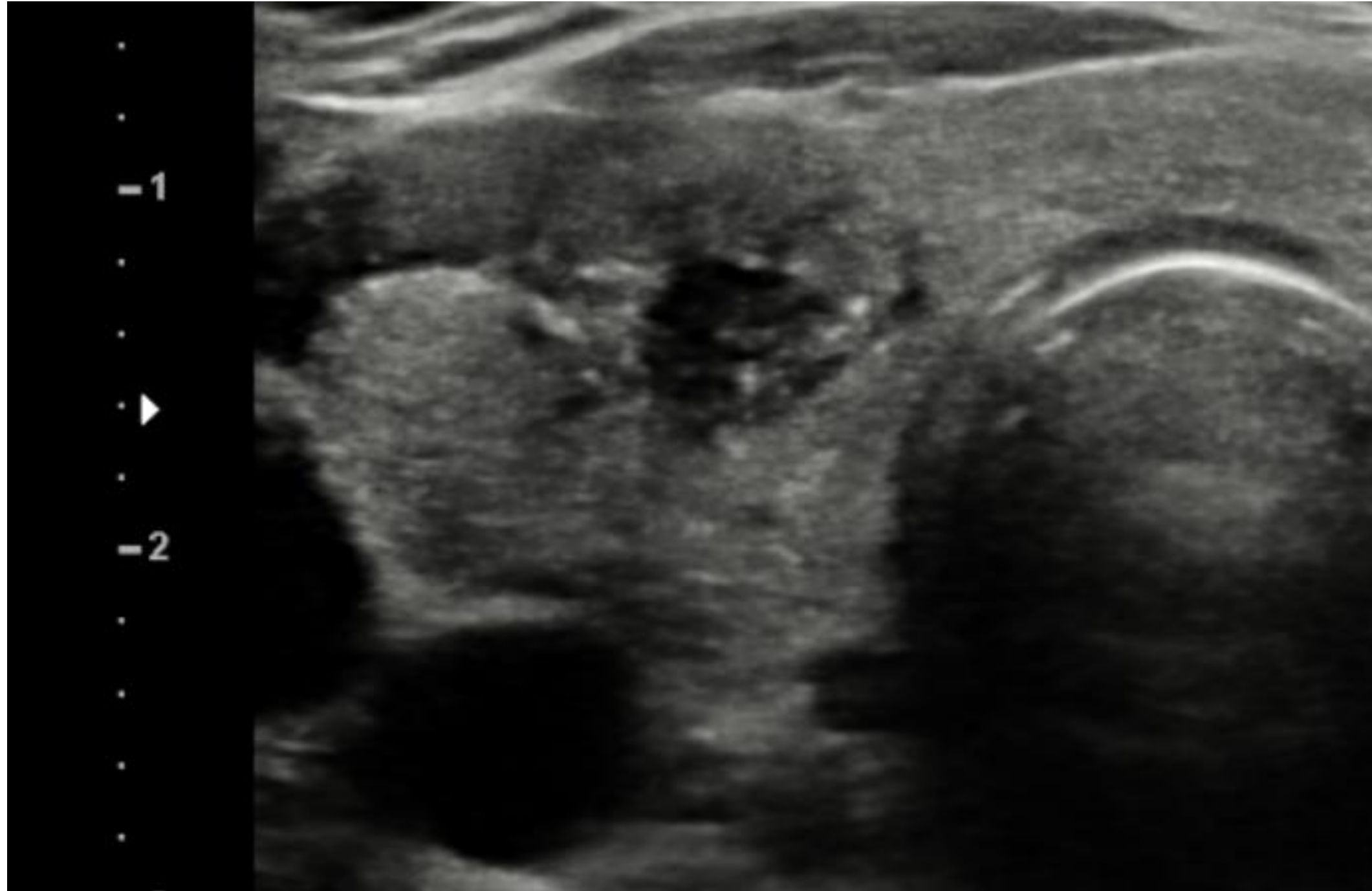


Appearances are suggestive of invasive salivary duct carcinoma

Case 2

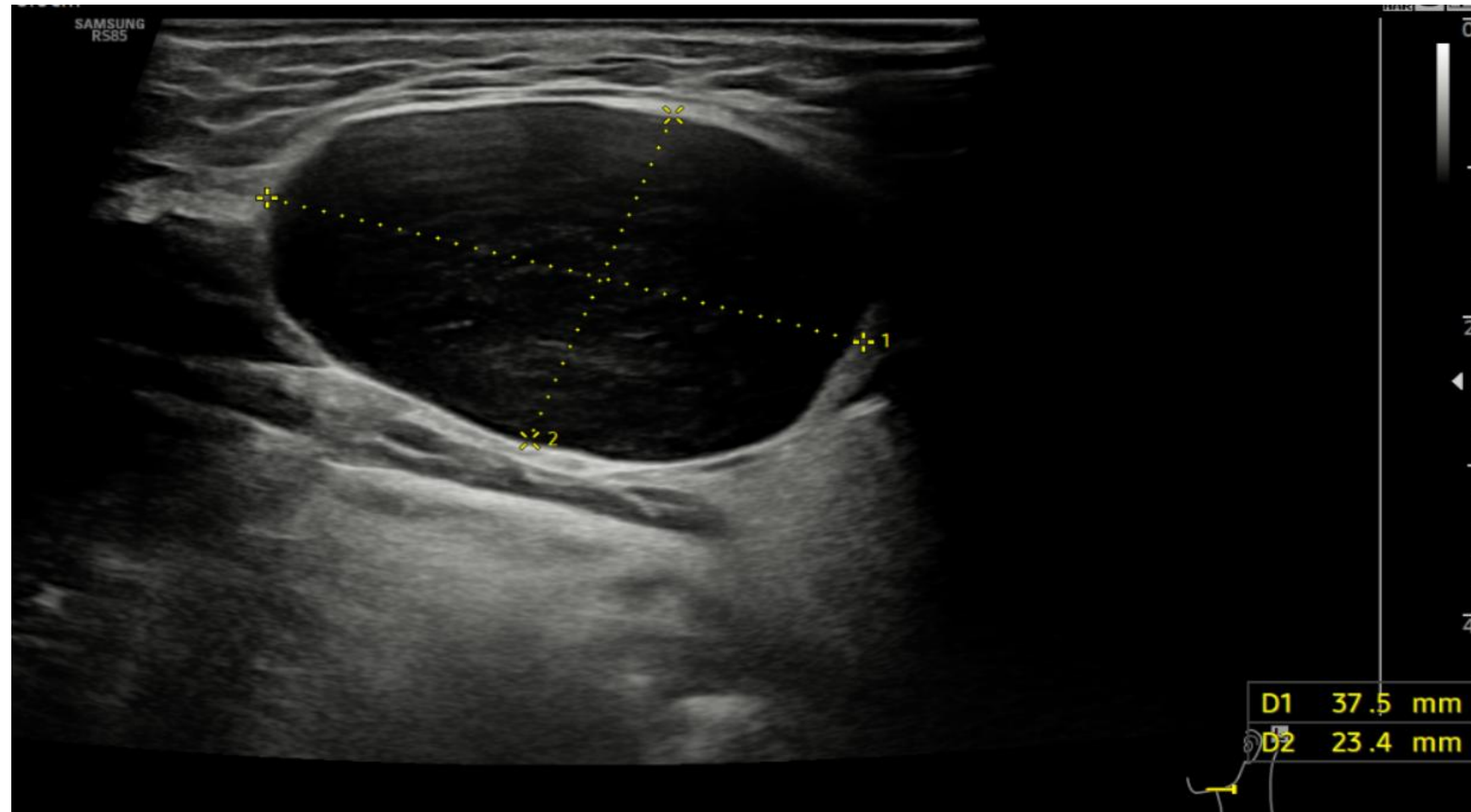
Anxious patient – mum had rare skin cancer and patient has a new lump at right angle of the jaw ? reactive lymph node ? parotid swelling





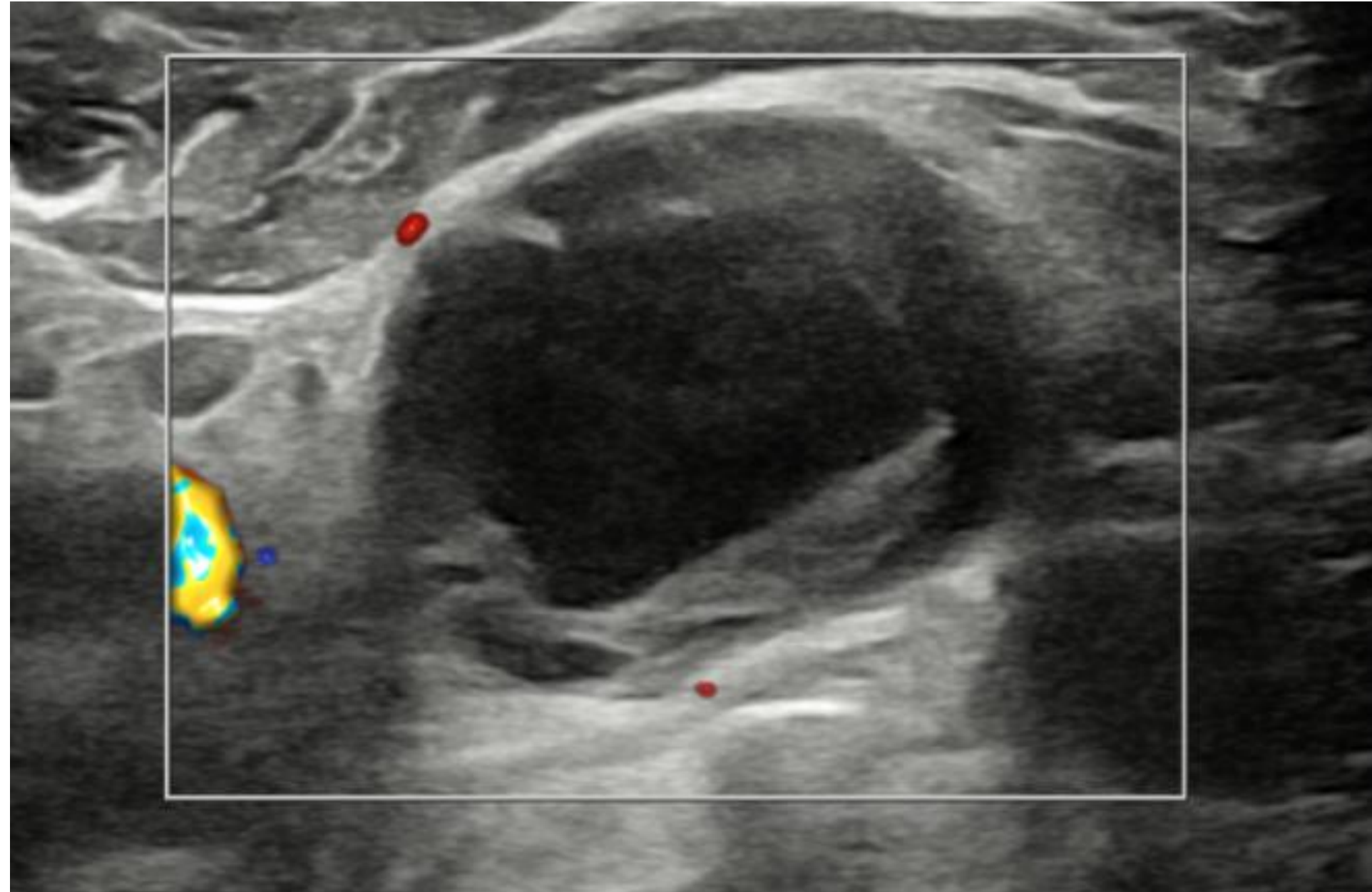
Case 3

Diffuse Large B-Cell Lymphoma, in remission presenting with left cervical lymphadenopathy 3x3 cm. Likely relapse for US guided biopsy



Case 4

Male patient. 6/52 history of persistent lump felt upper cervical chain left side of neck.



Biopsy may not always be appropriate

Sampling is unnecessary

The lesion is not safely accessible (high risk location or adjacent critical structures)

Diagnostic yield is likely to be low – will sample be diagnostic?

Results are unlikely to alter the patient management

Clearly benign imaging features

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