Incidental Findings on General Medical Ultrasound (US) Examinations: Management and Diagnostic Pathways Guidance

Produced by the British Medical Ultrasound Society

Professional Standards Group

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Foreword to the 2026 (4th) edition

The management of incidental findings on general medical ultrasound examinations is an area of clinical practice that continues to evolve, shaped by advancements in technology and the expanding body of evidence in the medical literature. In this updated edition we present the most current, evidence-based recommendations for addressing incidental findings in clinical practice. These updates are the result of a thorough review of the latest literature, ensuring that the guidance reflects the most recent research and best practices. To assist practitioners in their decision-making, we have included a clear guide to the level of evidence supporting each recommendation, enabling healthcare professionals to make well-informed choices based on the strength of the available data.

However, it is important to remember that while these recommendations are informed by robust evidence, local departments should tailor them to the specific needs of their patient populations, as well as to the resources, expertise, and preferences available in their setting. The management of incidental findings should always be adapted to reflect local circumstances and clinical judgement. We trust that this updated guidance will continue to

serve as a valuable tool for clinicians and healthcare teams, helping to standardise care while supporting the delivery of personalised, patient-centred management.

Dr Ruth Reeve, PhD
2026 Chair Professional Standards Group BMUS

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Introduction

An incidental finding in a clinical imaging context is defined as a finding of an abnormality in a symptomatic patient where the abnormality is not apparently related to the patient's symptoms [1]. It may also be defined as an abnormal finding in an individual who is healthy and asymptomatic, for example, in research participants or individuals being scanned for teaching or education purposes.

The key clinical question for practitioners will be; is this an abnormality, a normal variant or a finding within an expected range of normality? For example, the finding of a small volume of free fluid in the rectouterine pouch (Pouch of Douglas) in a young female patient.

The significance of incidentalomas is made harder for ultrasound practitioners with the rapidly advancing innovations in ultrasound technology that has resulted in greater spatial resolution. Structures that were not previously commonly visible on ultrasound, e.g. the pancreatic duct are now easily visible on new models. A further dilemma for the operator is that whilst the vast majority of incidentalomas will be a normal variant or an incidental benign finding, there will be the rare occasion where a significant and possibly malignant incidental finding is detected that requires urgent action.[2] Before any decision is made by the practitioner it is, of course, vital that previous relevant imaging and reports have been cross-checked in case the incidentaloma is long-standing and well-documented. The reporting of benign incidental findings can prove difficult. It is good practice to identify and mention them in the radiology report, but then define the situation further by stating that this is an incidental finding and unlikely to be of any significance.

An example could be:

"Incidental finding of spongiform nodule within the left lobe of the thyroid, with typical benign characteristics (U2 classification). No further action required"

Where a suspicious incidental finding has been found, there may be a requirement for consultation with a senior colleague or radiologist.

"An incidental cystic mass measuring 4.6cm in maximum diameter is detected in the mid portion of the left kidney. Some solid vascular elements are identified within the lesion. Findings reviewed with ……,Consultant Radiologist/Sonographer. A small cystic carcinoma should be excluded. An urgent referral for a CT scan is required. Please refer (as per local referral processes). The patient was informed during the scan appointment that an incidental abnormality was detected and further scans may be required.

Report has been communicated to referring clinical team on ... /../ 202..."

In addition to the significant healthcare costs of over investigation associated with incidentalomas, there is the increased and unwarranted anxiety that can be induced in patients. The incidence of incidentalomas in all imaging tests (excluding ultrasound) may be as high as 25% [3]. The majority of current evidence refers to incidentalomas detected on CT, MRI or Nuclear Medicine (and in particular PET CT). At present, there is no robust evidence for the incidence of incidentalomas detected on ultrasound [4].

The increasing frequency of incidental findings means that medical practice is changing as a direct consequence of imaging. For example, urologists state that their nephrectomy case mix has changed significantly where the majority of patients now being seen and operated on, are patients who have an incidental finding on imaging of a renal mass rather than the classical presentation of a symptomatic patient with haematuria [5]. This is a good example of the importance of having systems in place to deal efficiently with potentially significant incidental findings in patients.

- On finding an incidentaloma, the reporting practitioner is therefore faced with several questions and dilemmas:
- Is this a true abnormality or is this a normal variant /within the range of normality?
- How should this finding be reported?
- Should further investigation be recommended and, if so, by whom?
- What is the urgency of any action required?

Those who practise ultrasound regularly will be aware of the difficulties that are commonly encountered. This guidance will outline common clinical scenarios of incidental findings and offer a suggested pathway based on the latest available evidence and experience of clinical ultrasound experts (where relevant this will be highlighted within the guidance). These are guidelines that can be used where necessary as a starting point for pathway development and can be modified accordingly to reflect local practice. Guidelines approved and endorsed by BMUS serve as a guide to good practice but are not intended to be prescriptive. They should be used in conjunction with the BMUS/SCoR Guidelines for Professional Ultrasound Practice[6].

Appropriate systems must be in place for reporting of findings with suitable turnaround times, classification of findings priority (e.g. routine, urgent, critical, research/trial, etc.), including any addenda added [7].

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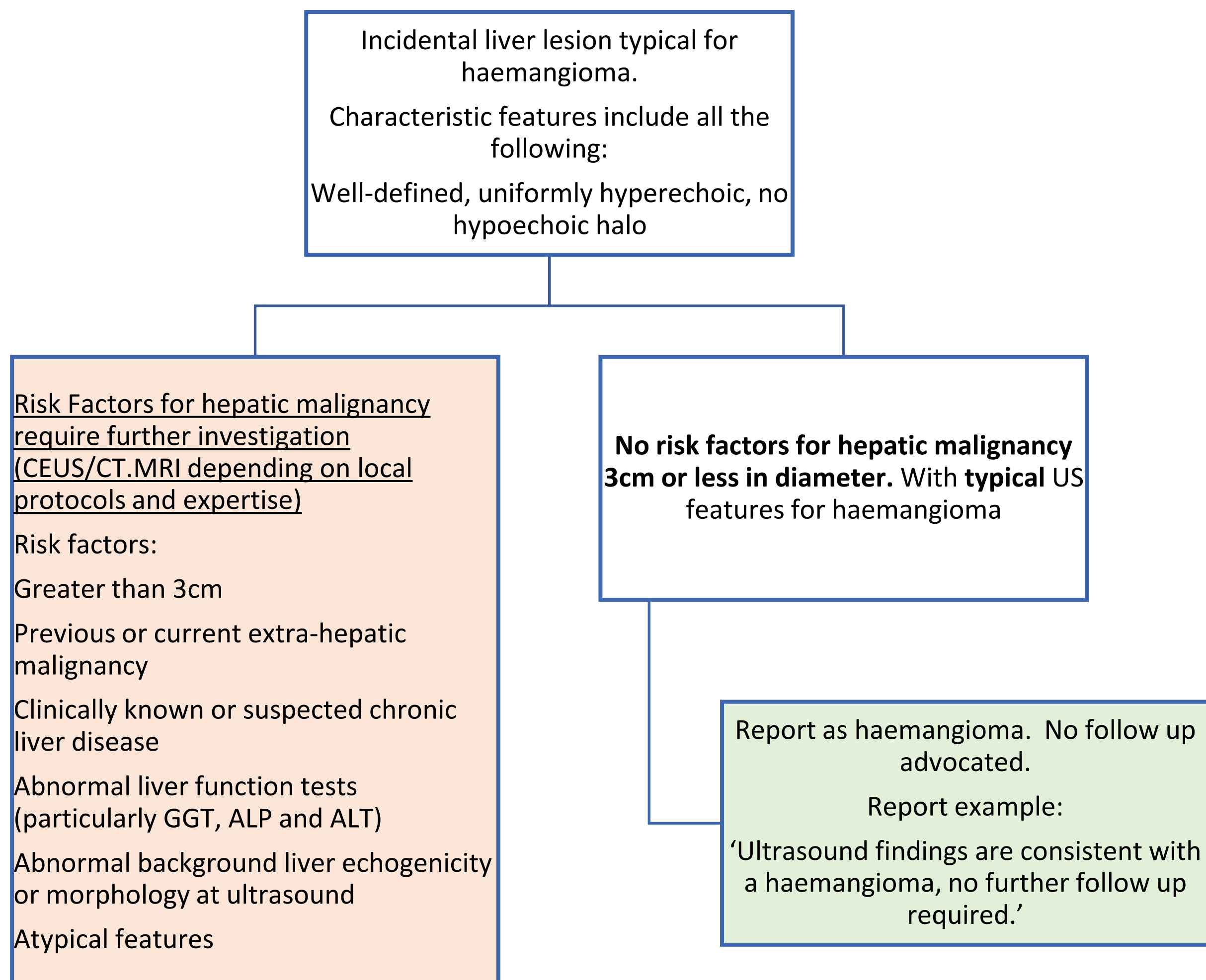
Hepatic Haemangioma

- Hepatic haemangiomas are commonly identified on abdominal imaging (present in 0.4%-20% of the population and most commonly in women between 30-50).
- Haemangiomas are most often asymptomatic incidental discoveries that may change in size during long term follow up.

In patients at low risk of hepatic malignancy, with a normal or healthy liver, and no history of malignancy a hyperechoic lesion is very likely to be a liver haemangioma. With typical imaging features (homogeneous hyperechoic, sharp margin, posterior enhancement, and absence of halo sign) in a lesion less than 3cm, ultrasound is sufficient to establish the diagnosis. Atypical haemangiomas detected on ultrasound require further characterisation with CEUS, MRI or CT



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Guidance based on evidence from international consensus & research findings from well-designed cohort or case-control studies.

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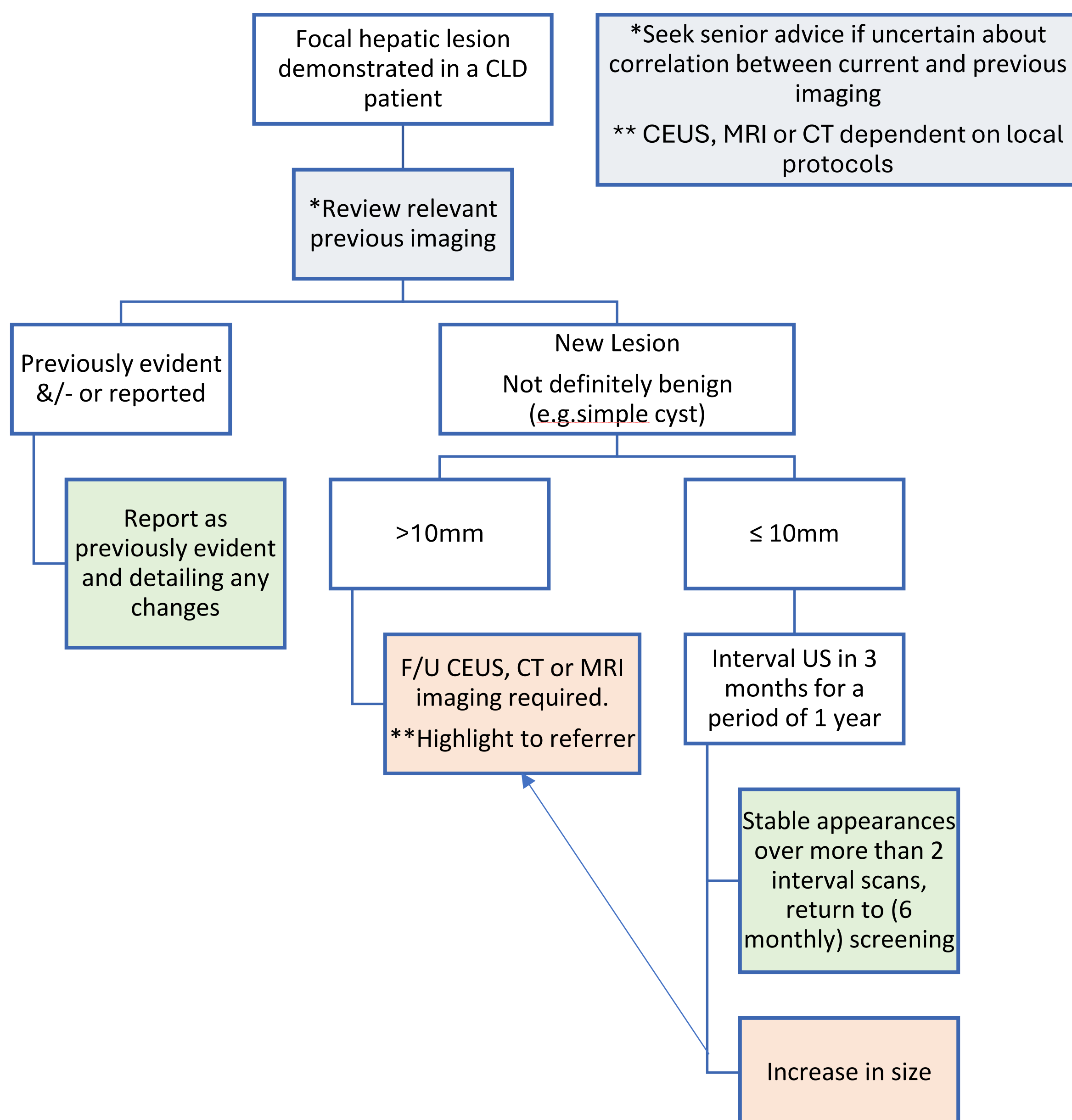
Lesions in Chronic Liver Disease

- Chronic liver disease (CLD) is a progressive condition leading to fibrosis and cirrhosis and is caused by a myriad of liver pathologies.
- Most cases of hepatocellular carcinoma (HCC) occur in patients with established risk factors for chronic liver disease, including hepatitis C virus (HCV) infection, heavy alcohol drinking, hepatitis B virus (HBV) infection, and Metabolic Dysfunction-Associated Steatotic Liver Disease (MASLD). These HCC risk factors lead to cirrhosis, which is present in 90% of patients with HCC in the Western world.
- Small regenerative hepatic nodules and other benign focal lesions can mimic HCC in this patient demographic and may cause a reporting conundrum.



See US LI-RADS for scoring findings and visualisation in HCC surveillance.

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Guidance based on evidence from international consensus & research findings from well-designed cohort or case-control studies.

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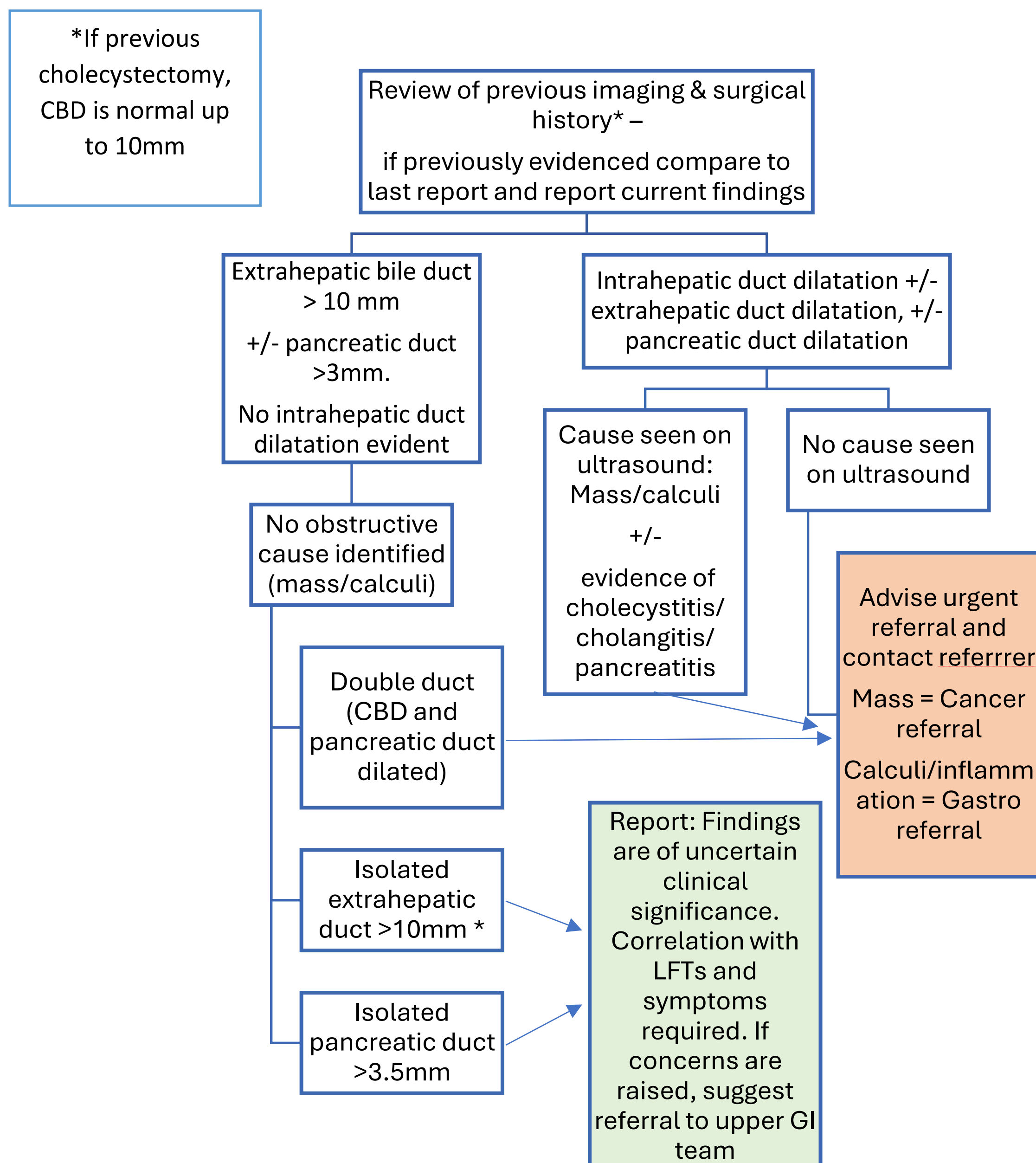
- Generally, the upper limit of the common bile duct (CBD) is <10 mm and pancreatic duct of <3 mm (at the pancreas head) in the absence of intrahepatic duct dilatation. Normal CBD is up to 7mm regardless of age. Post cholecystectomy up to 10mm is considered normal.
- Ensure imaging is optimised to assess duct dilatation adequately, i.e. reduce processing, increase edge enhancement, reduce dynamic range, measure inner to inner lumen.



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Currently, there is limited high-quality evidence or international consensus to guide management. Recommendations are primarily informed by small observational studies, retrospective cohorts, and expert opinion.

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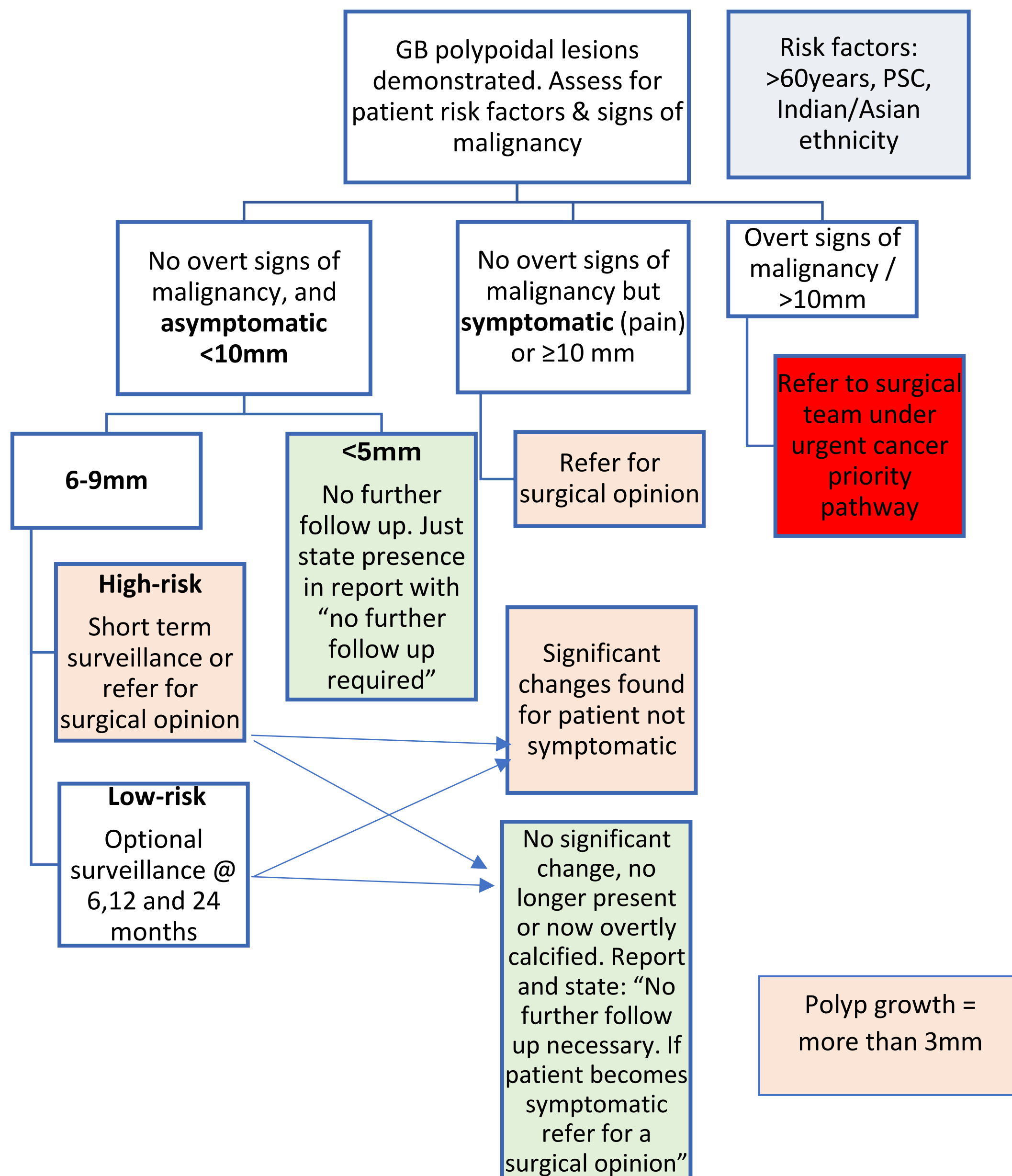
Gallbladder Polyps

- "Polypoid lesions of the gallbladder" refers to *any* elevated lesion of the mucosal surface of the gallbladder wall
- Cholesterol polyps account for the vast majority of all polyps (approximately 62%)
- Adenomas, which account for approximately 6%, have malignant *potential*.
- Gallbladder polyp growth alone may not predict malignancy, especially for smaller polyps. Routine aggressive surveillance may offer limited clinical benefit.
- Malignant features of GB polyps are disruption of gall bladder layers and local invasion



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High-quality evidence is limited. Observational data indicate low malignancy rates for small gallbladder polyps, and current consensus guidelines recommend no routine follow-up for polyps ≤ 5 mm in patients without risk factors.

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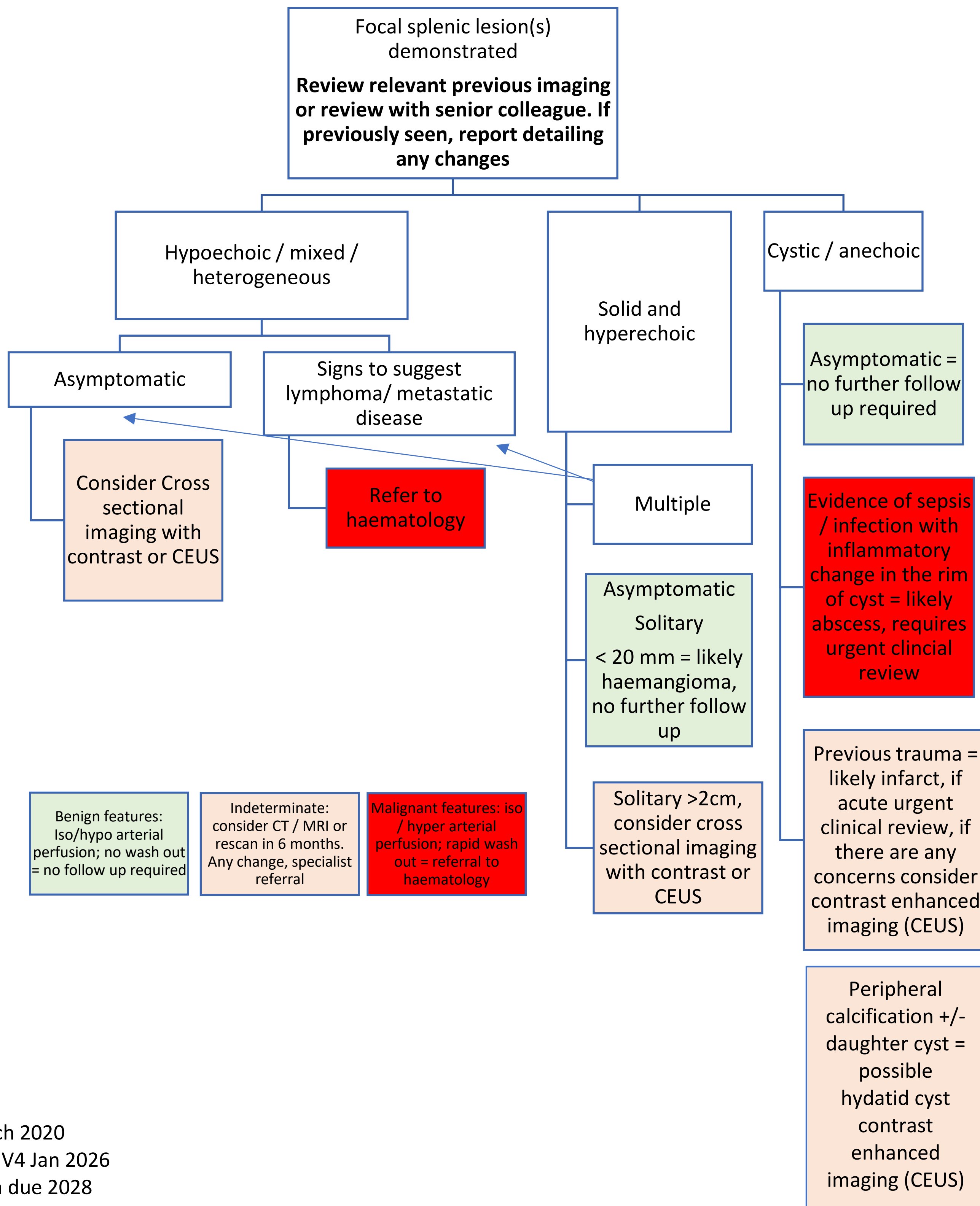
Indeterminate Splenic Lesions

- The spleen is a rare primary site of malignancy.
- Ratio of benign versus malignant lesions is 4:1 respectively.
- Benign splenic lesions are often solitary, whilst malignant lesions are more frequently multiple and fast growing. Solitary metastases are very rare.
- CEUS improves diagnostic confidence due to the characteristic perfusion patterns of benign and malignant lesions.



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Currently, there is limited high-quality evidence or international consensus to guide management. Recommendations are primarily informed by small observational studies, retrospective cohorts, and expert opinion.

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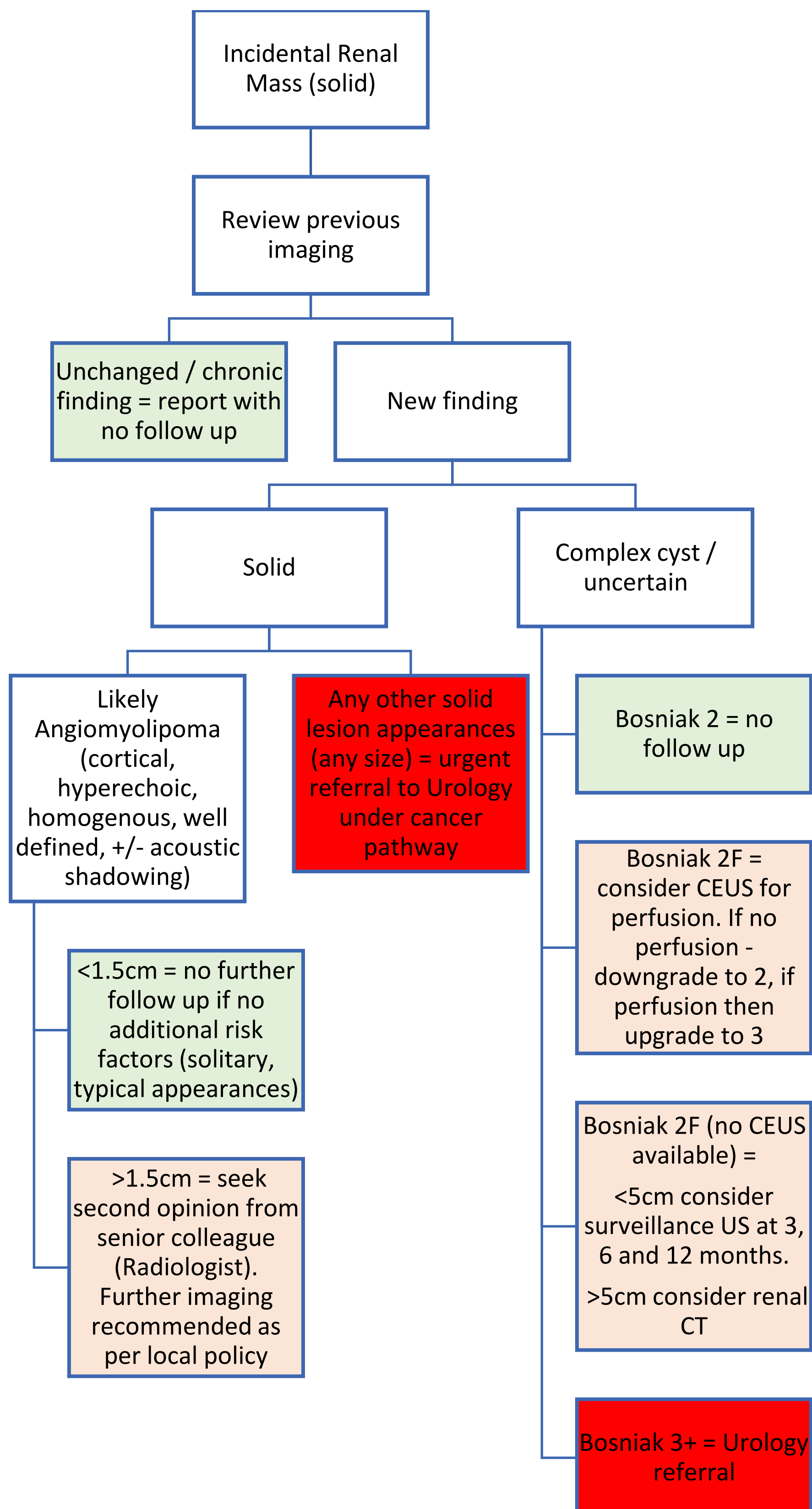
Imaging Management of Renal Masses



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Simple renal cysts are unilocular, thin walled with no internal echoes. Minimally complicated renal cysts have thin septa and possibly fine thread like calcifications. Complicated renal cysts have enhancing septa or solid nodules in the walls. Simple and minimally complicated renal cysts require no further follow-up.

Incidental Angiomyolipoma's (AMLs) are frequently detected in abdominal imaging, those that are detected on ultrasound should be assessed for their size and risk factors (e.g., patient history, presence of tuberous sclerosis, symptoms, etc.). Small AMLs, especially those under 1.5 to 2 cm, are often considered low-risk and no monitoring required if classical AML features.

Risk Factors for AML: If the patient has a higher risk of complications (e.g., tuberous sclerosis complex TSC, family history of kidney cancer, or multiple AMLs), monitoring might be more aggressive, even for small lesions.

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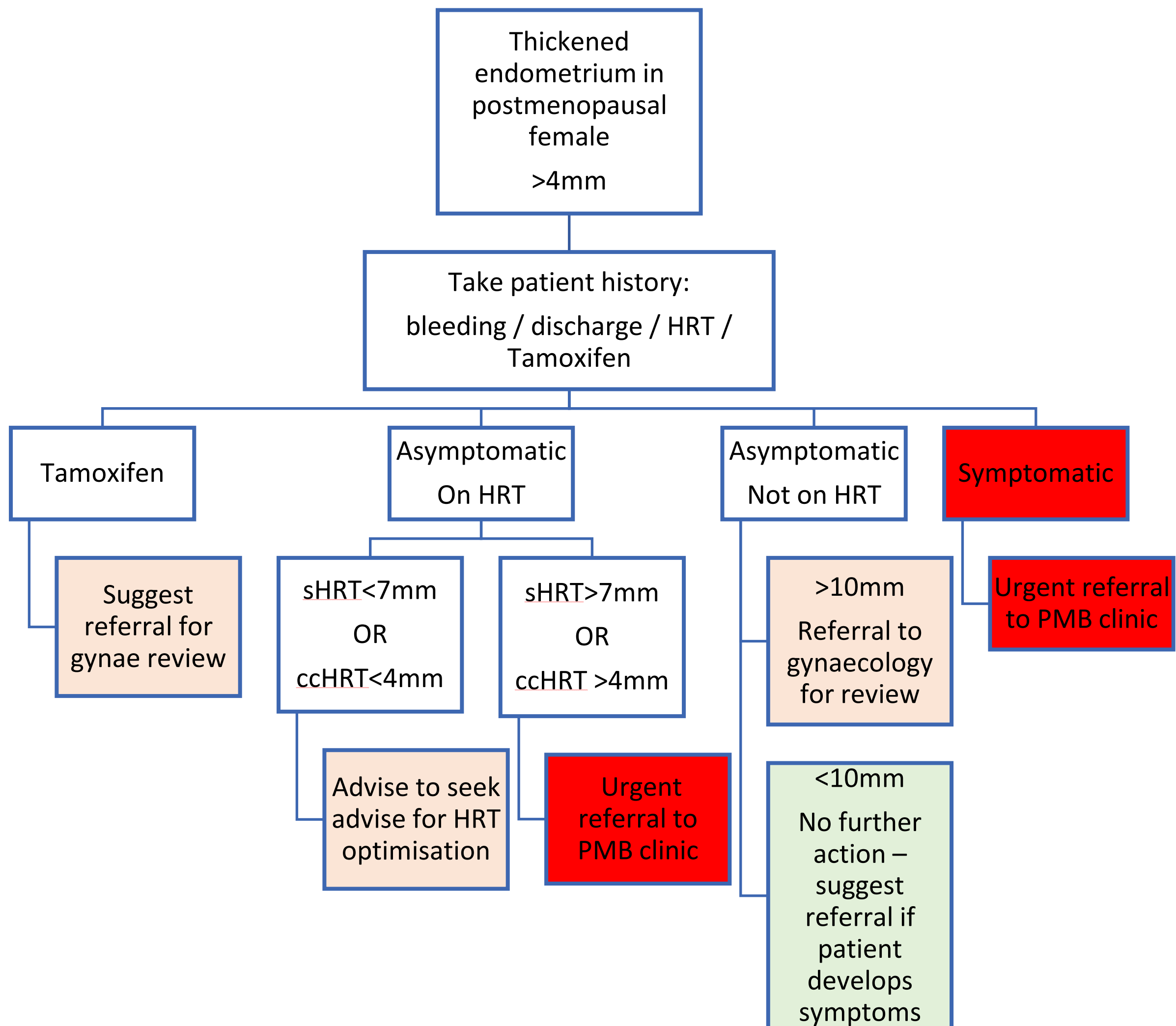
Incidental finding of thickened endometrium



- If on direct questioning at the time of the scan there are symptoms of post-menopausal bleeding or vaginal discharge (irrespective of endometrial thickness), patients should be referred to fast track PMB clinic (make explicit in report who is to refer). Clinical review by GP is advised to review the history in patients who are asymptomatic and the thickness is less than 10mm to ensure no relevant history.
- The same criteria are used for patients receiving HRT or Tamoxifen.

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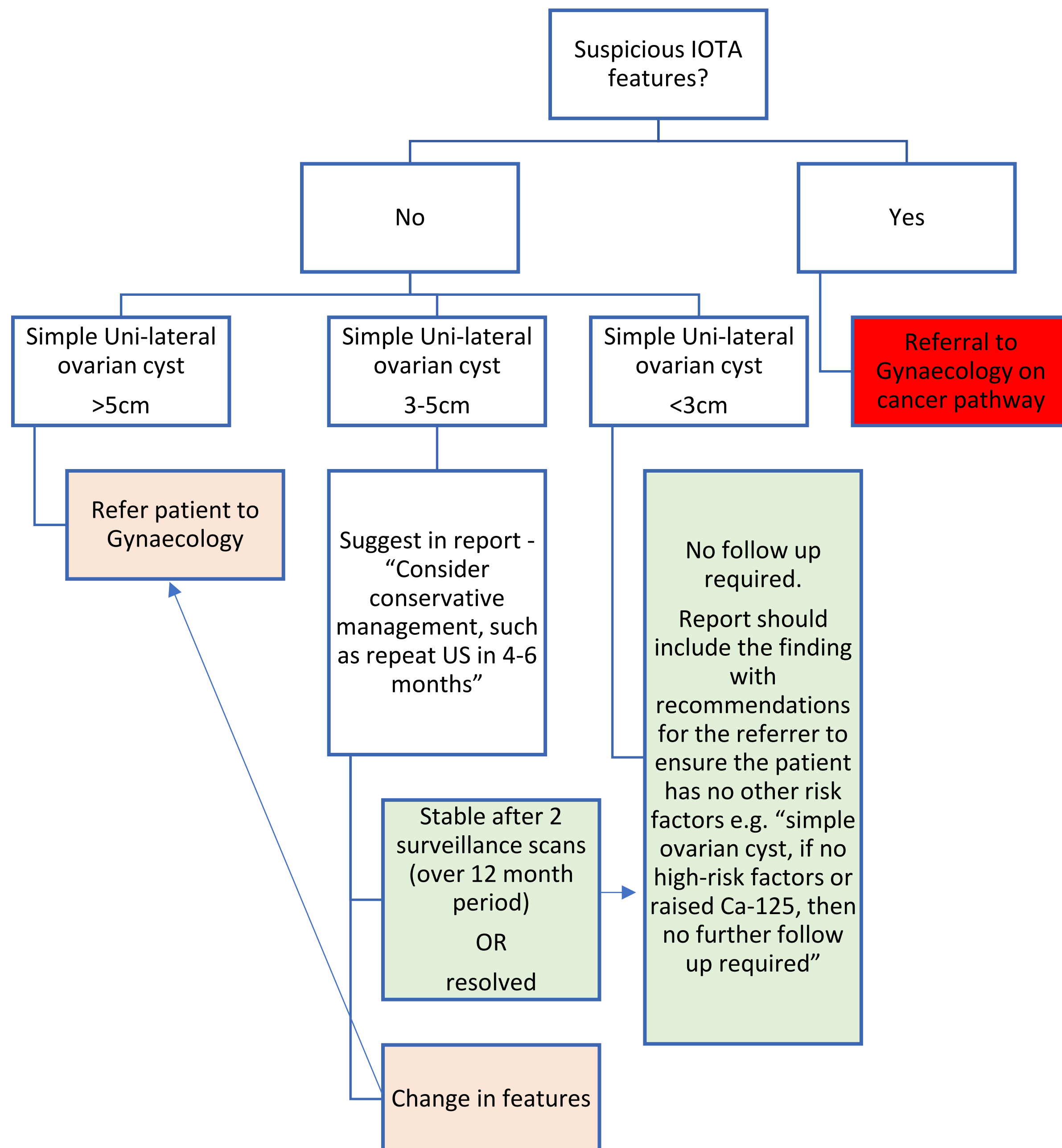
Incidental Post-Menopausal Simple Ovarian Cysts

The definition of a simple cyst includes completely anechoic cysts or cysts with one thin septation (<3mm). Simple cysts should be anechoic, with smooth thin walls, posterior acoustic enhancement, no solid component and no internal flow at colour Doppler ultrasound. BMUS advocates the use of IOTA guidance for all other ovarian mass ultrasound pathways. [IOTA Educational Materials | IOTA Plus]



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- Simple cysts < 3 cm need no follow up
- One thin septation (<3mm) or small calcification in wall is almost always benign. Consider it as a simple feature
- **Symptomatic** cysts of any size may need gynaecological referral, gain clinical history from patient
- In cases suspicious for metastatic malignancy urgent further imaging would be warranted

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Recommendations are based on moderate-strength observational evidence and expert consensus, including large imaging cohort studies showing low malignancy risk and international consensus statements

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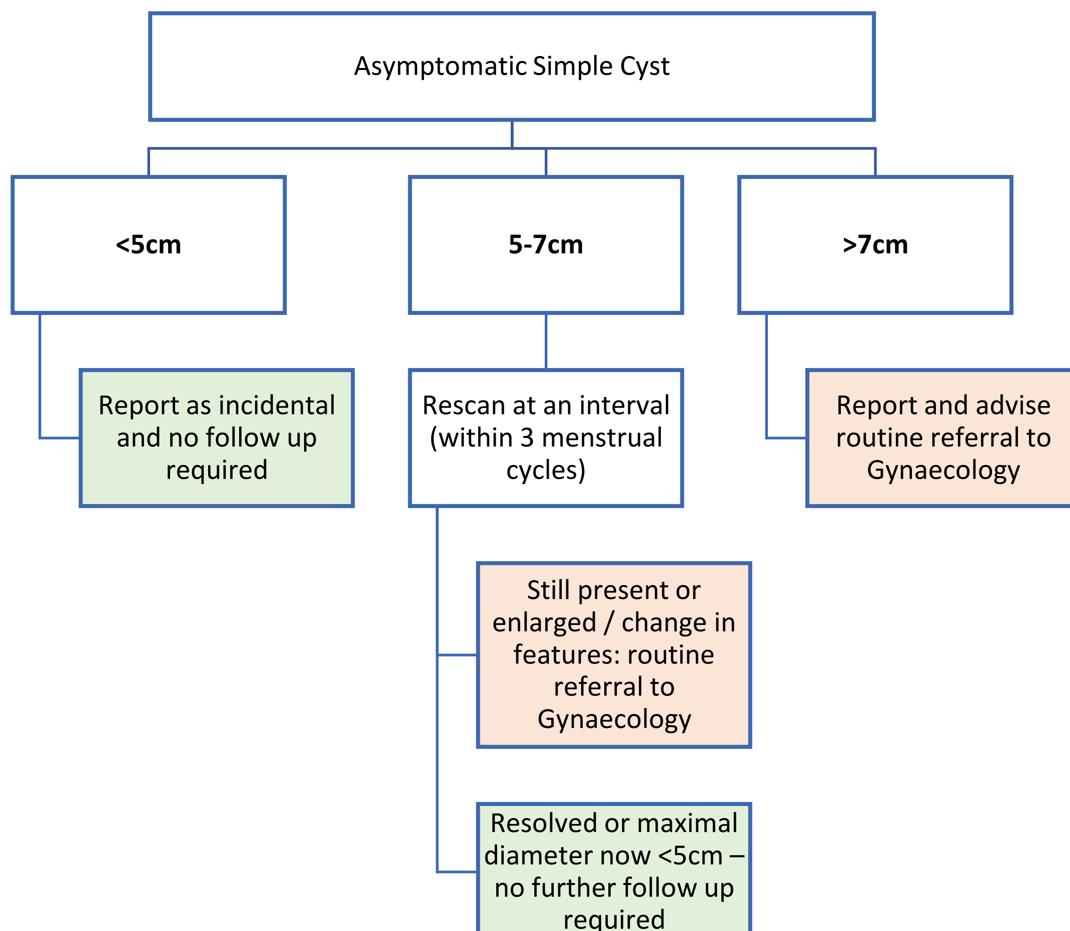
Incidental Pre-Menopausal Ovarian Cysts

- BMUS and the RCOG advocate the use of IOTA guidelines in determining the significance of ovarian masses
- CA125 assessment is not required if a simple ovarian cyst is seen at ultrasound scan
- The following cysts should also be treated as simple and the same size thresholds used:
    - paraovarian cysts where the ovary can be seen separately
    - cysts containing daughter cysts
    - cysts with one thin septation (<3mm) or small calcification in wall.
- Always refer to previous imaging if available CT/MRI/US
- Make explicit in the report who is to arrange follow up
  Symptomatic cysts may need referral
  Consider patients cycle and normal physiological appearances of the ovaries (follicles/dominant follicles/functional cysts etc)



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Recommendations are based on non-analytical observational evidence and expert consensus from national green-top guidelines.

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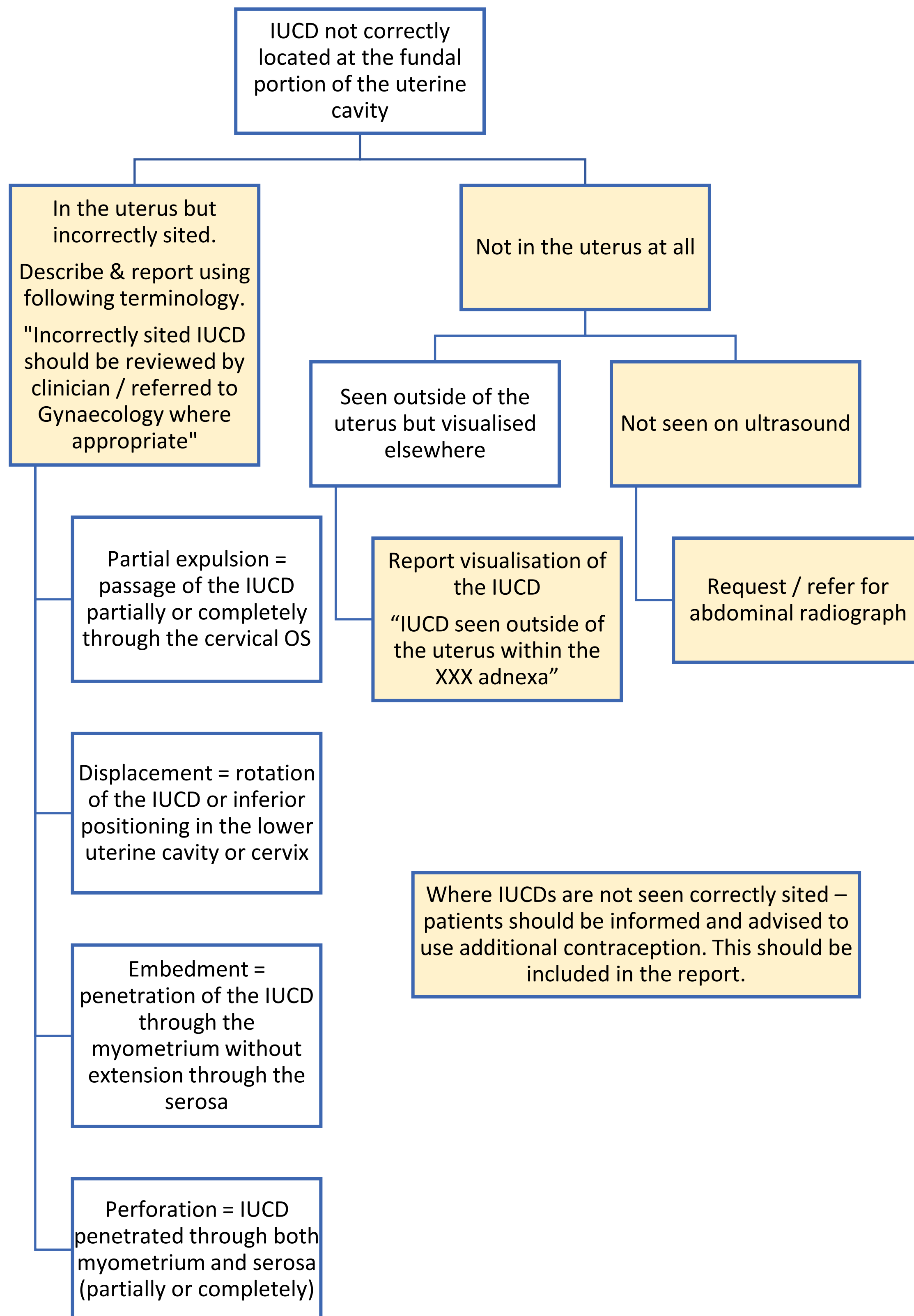
Management of Malpositioned Intrauterine Contraceptive Devices (IUCDs)



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- IUDs that are malpositioned or have become displaced over time do not necessarily cause a higher risk of pregnancy. However, this depends on the type of the IUD. Copper IUDs are more likely to result in contraceptive failure if they are dislocated than levonorgestrel releasing IUDs, particularly if the IUD is dislocated in the lower uterine segment or the cervix.
- Non-fundal IUCDs (>20mm from top of the uterine cavity, measuring from the top of the endometrial cavity to the proximal end of the device) can cause symptoms such a bleeding or cramping; the vast majority remain asymptomatic
- The contraceptive function of the malpositioned IUCD, especially those 20mm from the fundus, cannot be guaranteed. The decision to removed or replace is clinical and multifactorial
- IUCDs that are malpositioned or have become displaced over time do not necessarily cause a higher risk of pregnancy. However, this depends on the type of the IUCD. Copper IUCDs are more likely to result in contraceptive failure if they are dislocated than levonorgestrel releasing IUCDs, particularly if the IUCD is dislocated in the lower uterine segment or the cervix.

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Based on best practice from expert consensus

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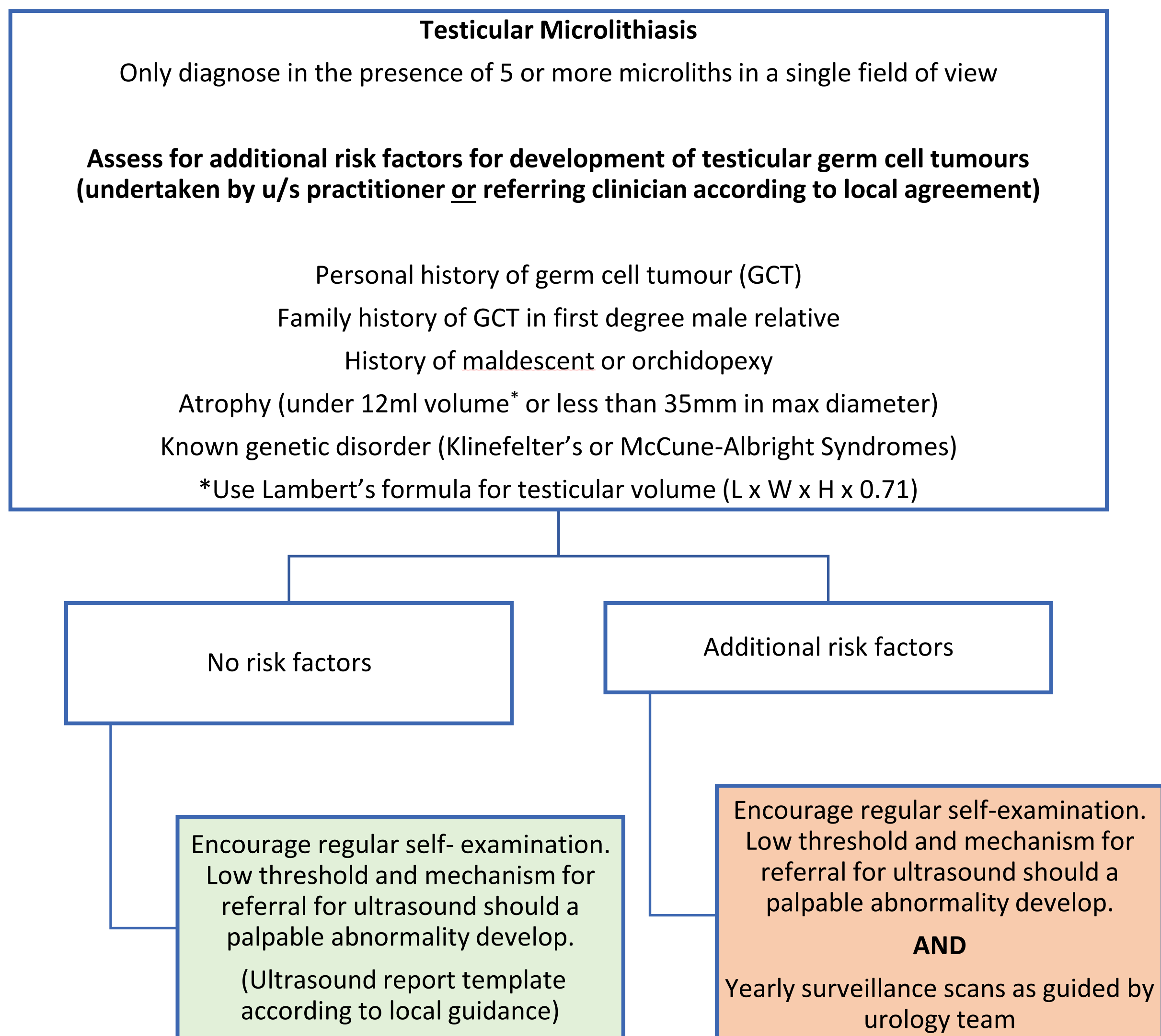
Testicular Microlithiasis

- Testicular microlithiasis is a common finding on scrotal ultrasound
- Follow-up scrotal ultrasound and serum tumour marker testing are no longer recommended
- The patient should be educated regarding regular self-examination and to seek immediate medical attention if there are any palpable changes or masses detected
- While there has been concern that testicular microlithiasis may be a risk factor for development of a subsequent testicular germ cell tumour, its significance remains uncertain
- This algorithm aims to standardise management where testicular microlithiasis has been discovered incidentally on scrotal ultrasound



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Guidance based on expert consensus and observational cohort evidence.

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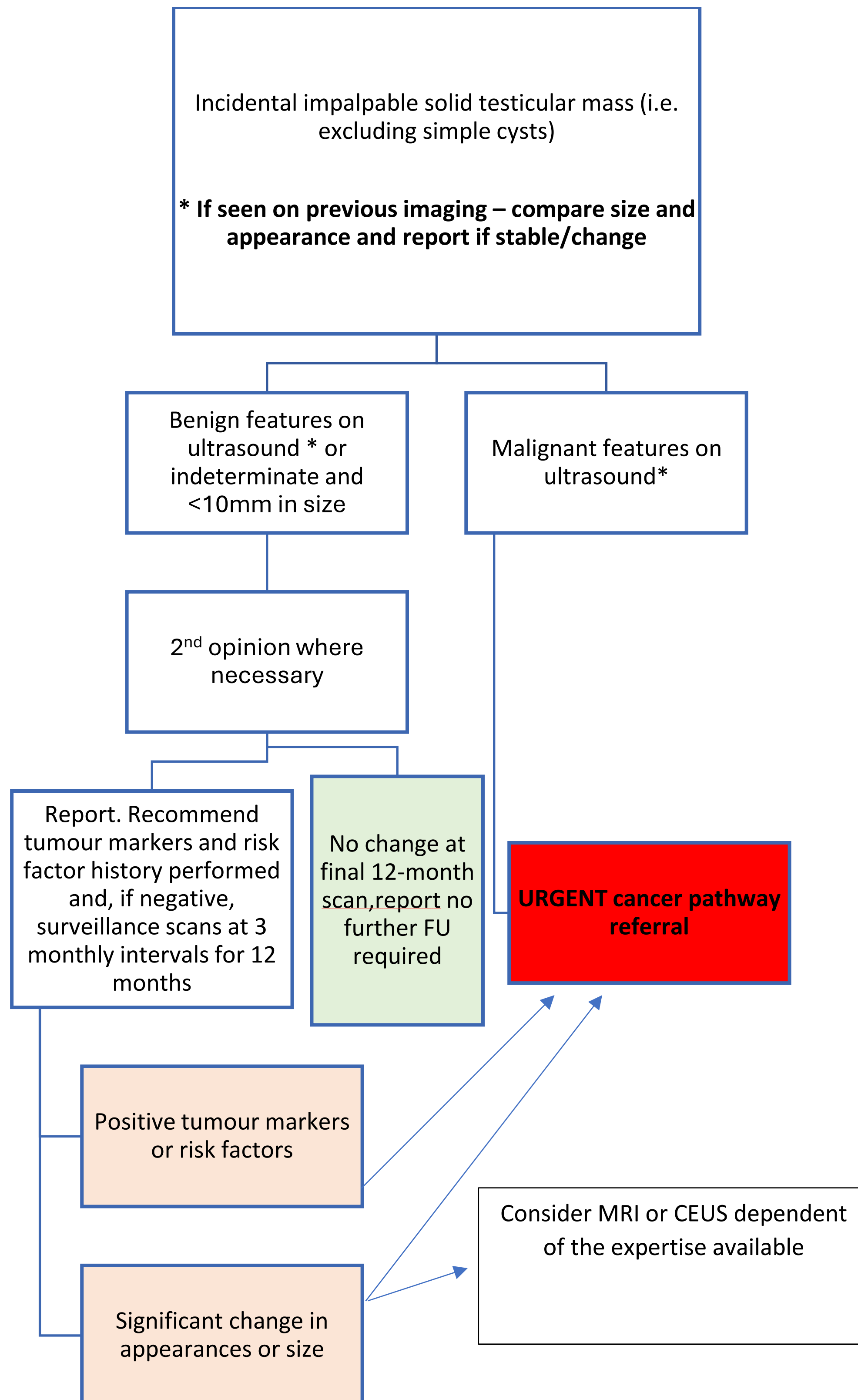
Incidental Testicular Lesions



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*Grey scale & Doppler features of testicular tumours	
Benign Patterns	Malignant Patterns
Non palpable and absence of clinical risk factors	Palpable (>10 mm)
Well defined	Irregular margins/ill-defined
Simple cyst	Solid mixed
Uniformly hypoechoic	Hypoechoic
Normal parenchyma	Microlithiasis + focal lesion
'onion skin' pattern	Intralesion microcalcifications
Geographic wedged-shaped hypoechoic areas	Irregular hypoechoic areas
Avascularity increases the probability of benign aetiology – suggest the use of microvascular imaging technique as low flow difficult to detect in small lesions	Vascular

- Incidental, asymptomatic non-palpable, solid testicular masses are common and can be found in up to 7.4% of the population
- The majority of palpable solid testicular lumps are malignant
- The majority of incidentally discovered non-palpable masses are benign (73%). In the absence of risk factors, the report should avoid advice leading to orchidectomy.
- Many radical orchidectomies are performed for benign disease. Implications for fertility, endocrine function and body image are important to consider

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Guidance based on expert consensus and observational cohort evidence.

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Incidental Thyroid Nodules

Since the frequency of incidentally detected thyroid nodules can be up to 70%, depending on the patient population age, The British Thyroid Association recommends:

US detected incidental nodules – a benign (i.e. U2) appearance should result in no further action other than reassurance. (Any incidental nodule detected on US should be assessed using BTA criteria (i.e. U1 – U5)).

Incidentally detected nodules on CT or MRI should undergo clinical assessment. In the majority of cases no further assessment/investigation is required. However, if suspicious findings on CT (extracapsular extension, tracheal invasion, associated suspicious lymphadenopathy) or the patient belongs to a high risk group/significant clinical concern, US assessment is recommended.

Nodules detected on PET CT with focal FDG activity – should be investigated with US +/- FNAC, unless disseminated disease is identified and the prognosis from an alternative malignancy would preclude further investigation.

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Guidance based on evidence from UK consensus & research findings from well-designed cohort or case-control studies. Some international evidence also supports this guidance.

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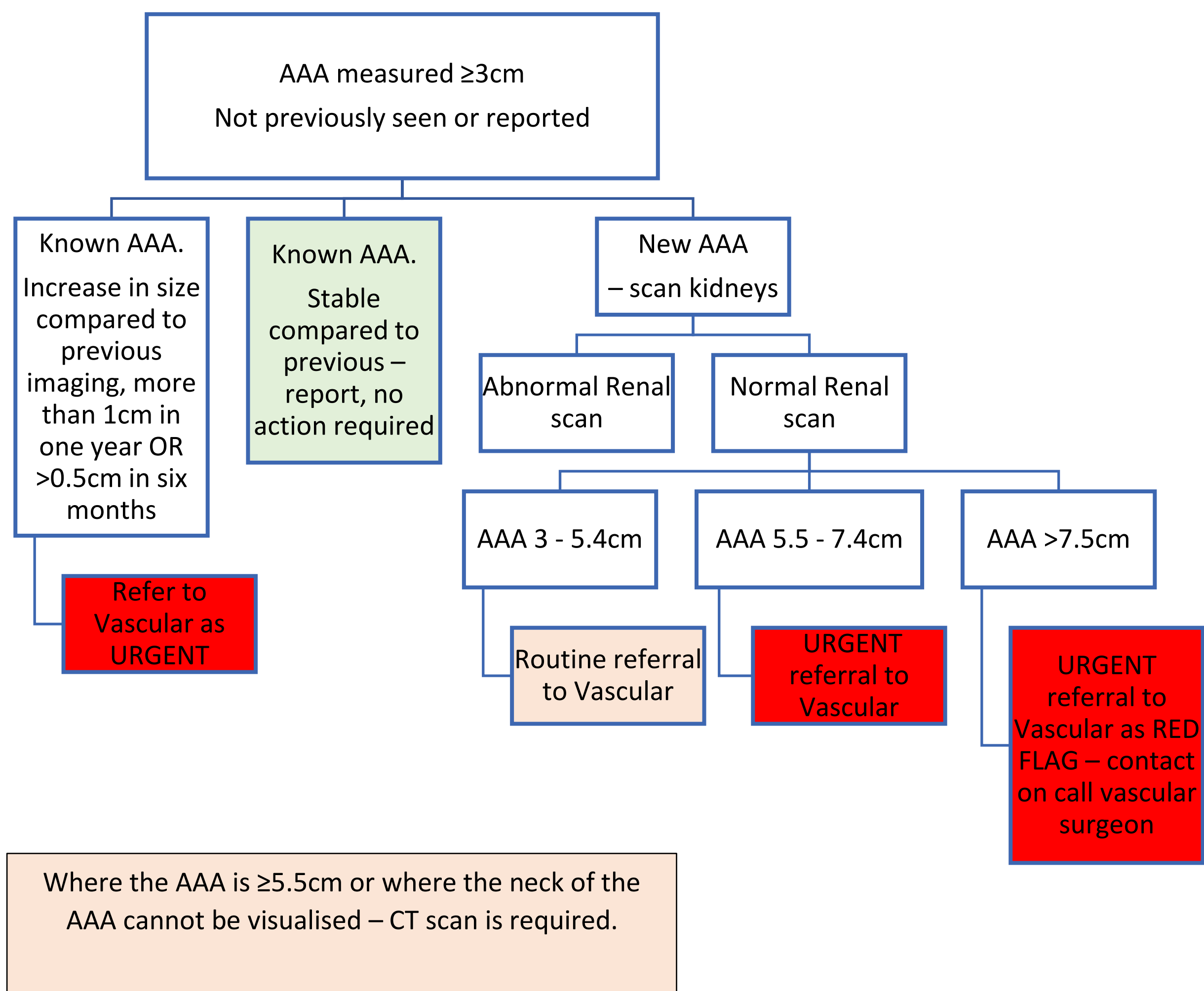
Incidental Abdominal Aortic Aneurysm (AAA)

- The NHS abdominal aortic screening programme defines an aneurysm of the abdominal aorta as ≥3cm measured from the inner-to-inner wall of the vessel.
- A 'small' AAA measures between 3 cm and 4.4 cm and up to 1% of men on the AAA screening programme will have a small AAA diagnosed.
- If a suprarenal aortic aneurysm is identified, check to see if the aneurysm is extending from the thorax. Report thoracic extension or uncertainty, suggest that a thoracic aortic aneurysm is a possibility and recommend further cross-sectional imaging to assess the proximal Aorta.



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NHS. https://www.nhs.uk/conditions/abdominal-aortic-aneurysm-screening/

Guidance based on national screening guidance.

Communication of reports

The timeliness of the reporting of incidental findings when they are deemed to be significant is key. The onus is on the reporter to ensure that the report is communicated appropriately, be it a 'phone call to a clinician or urgent/routing electronic transfer to a practice, post etc.

Where actions have been taken, they should be recorded appropriately in the report e.g. "report finding telephoned through to on-call surgical registrar at 00:00hrs".

There are several recommended fail-safe mechanisms which are commonly used in UK practice to ensure patient safety and appropriate clinical follow up of abnormal findings. A 'red flag' system, used in practice within the UK, can be modified to give a more streamlined and efficient communication system to allow referrers to be informed in an appropriate timescale and to ensure that there is a tailored fail-safe backup system in place to ensure patient safety. Where this can be directly linked to Radiology Information Systems with voice recognition reporting etc., cost efficiency and enhanced safety for patients will result. This aligns with the recommendations in the following RCR document: Standards for the communication of radiological reports and fail-safe alert notification | The Royal College of Radiologists (rcr.ac.uk)

The following standards for report notification have been defined by the RCR:

Standard 1

All radiology reports should be produced, read and acted upon in a timely fashion

Standard 2

It is the reporting practitioners' responsibility to produce reports as quickly and efficiently as possible, and to flag the reports when they feel a fail-safe alert is required

Standard 3

It is the responsibility of the employing organisation to ensure appropriate reposting and fail-safe systems are in place.

The following is an example of a 'fail-safe' reporting system which has been implemented (courtesy of Hull University Teaching Hospitals)

The 'fail-safe' alert system should be used when there are urgent, critical, significant or unexpected findings that require the referrer to action or to discuss with the patient. These findings may be unexpected or expected, but the examination has been performed to

confirm the clinical diagnosis. The findings that should be flagged under this system would require the referrer to take further action.

The appropriate alert must be added to the end of the report. OPD/IP reports that contain this alert are emailed (or other electronic alert system) to the referrer with a requirement for the referrer to respond within a given time frame.

GP reports with alerts are currently required to be emailed to the surgery and this action recorded on the radiology system.

Colour	Report Phrase	Examples of use
Green	Routine – No action required	• Normal study • Normal variant • Insignificant abnormality for presenting symptoms (i.e. renal cyst, mural or subserosal fibroid, gallstones in asymptomatic patient)
Yellow	This report contains a serious, unexpected or urgent finding, requiring acknowledgement (CODE: YELLOW1)	• Any finding requiring action • Mass • Change in previous findings • Follow up imaging required • Biliary dilatation (GP/OP) • Acute cholecystitis • Unexpected free fluid • Asymptomatic AAA over 7.5 cm • Positive DVT
Orange	This report contains a serious, critical or urgent finding, requiring acknowledgement (CODE: ORANGE1). The clinical findings were discussed at the time of reporting with [...] at [...].	• Any finding requiring action within 4 to 6 hours • Hydronephrosis in septic patient • Appendicitis (positive evidence) • GB perforation in unwell patient • Biliary dilatation with jaundice • Symptomatic AAA • Pyloric stenosis / intussusception
Red	This report contains a serious, critical or urgent finding, requiring acknowledgement (CODE: RED1). The clinical findings were discussed at the time of reporting with [...] at [...].	• Any finding requiring action within 30 mins / 1 hour • Obvious perforation (free air in peritoneum and echoes within ascites) • Signs of dissecting AAA (fluid around AAA)

Version History Log

Version	Date Published	Details of key changes
V1.0	March 2021	New Document.
V2.0		
V3.0	Dec 2021	
V4.0	January 2026	Update of recommendations based on review of new evidence and national guidance.

Disclaimer

The British Medical Ultrasound Society produces recommendations and guidelines as an educational aid to inform safe practice. They offer models and pathways associated with established clinical imaging techniques and best professional practice, based on published evidence.

BMUS recommendations and guidelines are designed to inform local protocols issued by employers, but are not intended to be inflexible or prescriptive. Therefore, the choice of imaging examination and subsequent management of all patients is ultimately a local decision based on agreed schemes of work, the clinical information provided, and the ultrasound practitioner's professional judgement.

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