

UNIVERSITY HOSPITAL SOUTHAMPTON GUIDELINES FOR GP ULTRASOUND REFERRALS IN ADULTS

Introduction

Ultrasound is often used as a first line investigation as the test is available, non-invasive and does not involve ionising radiation. Many primary care clinicians express considerable uncertainty as to where it can be used most effectively. These guidelines are designed to help GPs in that challenging decision making process, reducing GP workload and reducing demand for scans where ultrasound is unlikely to be helpful, creating capacity for those who really need it.

At the same time, we ask for careful consideration before marking a case as “urgent”. This prolongs waiting times for everyone, and delays some patients being referred for an appropriate test as they wait for an ultrasound, which may not be indicated.

We recognise that there may be specific clinical situations not within the scope of these guidelines when an ultrasound is helpful, and if there are any clinical queries we would be happy to answer these. Please contact uhs.pacssupport@nhs.net and leave your query with your preferred contact details and the relevant radiology consultant, registrar or sonographer will get back to you.

These new guidelines have been developed by the local consultant radiologists and the lead clinician for gynaecology ultrasound to help general practitioners use ultrasound most effectively to the benefit of all their patients. Advice has been pulled together from the Royal College of Radiologists, Royal College of General Practitioners and relevant local and national guidelines with input from local specialists.

ABDOMINAL ULTRASOUND

Indications

- Clinically suspected cholelithiasis
- Right upper quadrant pain- ?liver abscess or subphrenic collection
- Investigation of jaundice
- Persistently abnormal LFTs (not slightly elevated GGT)
- Ascites
- Evaluation of pulsatile abdominal mass/abdominal bruit

NOTES

1. The value of ultrasound is in **answering specific clinical questions and confirming/refuting a provisional diagnosis.**
2. **It is not of value as a “screening test”** for vague abdominal symptoms, to rule out malignancy or for abdominal bloating. If ovarian pathology is suspected then a pelvic ultrasound is advised.
3. In the absence of clinical abnormality or a specific indication it is unlikely to be helpful in investigating left upper quadrant pain or pelvic pain in males.
4. It is not the investigation of choice for imaging the GI tract or excluding GI pathology. It will not reliably detect GI tumours.
5. As with clinical examination there are limits in what ultrasound can detect in obese patients.
6. Most abdominal masses, ?cancer, will probably require CT with the exception of documenting malignancy in palliative cases and should therefore be referred to outpatients.
7. Acute abdomens will generally require CT rather than ultrasound with the exception of ?benign biliary pathology or ?gynaecological cause (especially in young patients) and will therefore require surgical assessment.

ADULT GYNAECOLOGY/PELVIC ULTRASOUND

This document is not advice on the follow-up protocols of established pathology e.g. ovarian cysts.

- Urgent scenarios e.g. early pregnancy and acute gynaecology – acutely ill patients should have a pregnancy test and referral to Early Pregnancy Unit/Gynaecology Assessment Unit (EPU/GAU) where they may have an urgent scan (depends on the clinical scenario – some same day, some a few days later).

In no particular order:

INDICATIONS

Pelvic pain

Post-Menopausal Bleeding (PMB)

Menorrhagia

Pelvic mass

Vague pelvic symptoms – to exclude ovarian cancer

Intermenstrual bleeding (IMB), Postcoital bleeding (PCB)

Urinary symptoms

Lost coil

Subfertility

History of swollen lower limbs (could be unilateral or bilateral)

NOT INDICATED

Vulval conditions

Vaginal cysts

Polycystic Ovaries PCO

NOTES on indications

Gynaecology ultrasound - a pelvic scan - should be performed Transvaginally (TV) in all cases except where the patient is virgo intact, if the patient doesn't consent or if she is unable to consent. In those cases, the patient will undergo a transabdominal pelvic scan.

In some cases, a transabdominal pelvic scan may be indicated in addition to the TV Scan e.g. for fibroids.

Pelvic pain - endometriosis can now be diagnosed on ultrasound in specialist centres (e.g. PAH). The average diagnostic delay between symptoms and diagnosis of endometriosis is currently 8 years. The clinical suspicion is raised when the pain is exclusively related to menses, and if there are cyclical bowel symptoms especially so.

PMB – please note whether the patient is on HRT (very low risk of malignancy) and if so, which type (cyclical or continuous combined). Also mention if she is on Tamoxifen (higher risk for endometrial cancer) in which case she still needs a scan, but also an endometrial biopsy is required (hence referral to the PMB clinic will be required for such patients).

ALL patients with PMB need a speculum examination (to exclude e.g. cervical cancer) as well as an ultrasound, if both are normal then referral to PMB clinic can be avoided (SIGN guidelines).

Menorrhagia

NICE suggests scan not necessary prior to fitting Mirena.

Conditions such as fibroids, adenomyosis, will lead to lower success rates with Mirena/ablation.

Pelvic mass – if there is a pelvic mass palpable with a suspicion of malignancy, an urgent pelvic ultrasound is indicated, unless it is obviously a fibroid, in which case a routine scan is more suitable.

Vague pelvic symptoms – to exclude ovarian cancer - NICE guidelines – in this context bloating means permanent abdominal distension, not intermittent 'windy' abdomen. A CA125 is not required prior to the ultrasound (this is not a good diagnostic test for malignancy and is often falsely raised in premenopausal women).

IMB/PCB – it is important to exclude an intrauterine cause e.g. endometrial polyp. Many cervical cancers are also visible on ultrasound. Such patients also need a speculum examination (and sometimes Chlamydia swabs).

Coils – a scan can determine the location of the coil (this is not an urgent request) and sometimes whether a uterine perforation has occurred.

Subfertility – in an asymptomatic patient, a routine pelvic scan is useful after 1 year of regular intercourse with no pregnancy.

History of swollen lower limbs (could be unilateral or bilateral) – scan can exclude a pelvic mass causing vascular flow obstruction

NOTES on not indicated

Vulval conditions – clinical examination is superior

Vaginal cysts - ultrasound is only required occasionally in a specialist setting

Polycystic Ovaries – this is rarely useful – for the diagnosis of PCOS (Polycystic Ovarian Syndrome, 2/3 criteria are required – irregular menstruation, evidence of high testosterone levels, and ultrasound evidence of polycystic ovaries (PCO). (See Rotterdam Criteria).

Most patients referred for 'PCO' already have irregular periods and hirsutism, so ultrasound doesn't really add much. We *can* perform a scan for this indication, especially if you indicate how it would affect management.

Some specialist endocrine clinics and IVF units do require a scan as it can be clinically useful. Ovaries which look polycystic on ultrasound (PCO) do not cause pain and such patients are not infertile.

RENAL ULTRASOUND

Indications

- Chronic loin pain – MSK causes excluded
- First UTI in male (require flow and residual volume assessment also)
- Recurrent/persistent UTI in female
- Deteriorating renal function to exclude obstruction (again ideally flow and residual volume assessment in males)
- Chronic kidney disease (CKD) stage 4 or 5 (eGFR <30) once only, not in case of changing renal function, unless symptoms of obstruction
- CKD 1,2 &3 with urine albumin/ creatinine ratio <30mg/mmol, only if there is a history of urological disease or a family history of polycystic renal disease.
- Screening for adult polycystic renal disease (note that cysts may not appear until patients are in their 20s)
- Unexplained renal failure with blood +/- protein in the urine

Not Indicated

- Acute renal colic – requires CT KUB [link to CTKUB pathway]
- Haematuria – patients require fast track referral to haematuria clinic as per local guidelines (which will inevitably involve ultrasound as part of assessment and therefore creates duplicate requesting). Ultrasound could be considered in unexplained, non-visible haematuria in patients under 60 but this should not delay appropriate referral.
- Further investigation of suspected absent/ectopic kidney – renogram preferred
- CKD 1,2 &3 – see exceptions above
- First line screen for renovascular hypertension – these patients should be referred for specialist assessment (MRI is a more sensitive test)

BLADDER

Indications

- Measurement of post voiding residual in suspected outlet obstruction
- Neurogenic bladder
- Urinary incontinence

SCROTUM

Indications

- Intra-testicular lump or uncertainty about whether a lump is intra or extra-testicular
- Impalpable testis
- Hydrocele of recent origin

Not indicated

- Definite extra-testicular lump with normal testis
- Subcutaneous lumps/pinhead sized nodules – these are common and are not testicular cancers
- Short-term testicular/epididymal pain and normal examination
- Suspected torsion – requires immediate referral

INGUINAL HERNIAS

Not indicated

- An inguinal hernia is a palpable lump and is therefore generally detectable clinically
- Groin pain in the absence of a lump is not an indication for US If lymphadenopathy or other lumps are suspected, this should be followed up clinically and specialist referral considered if persistent
- A specialist hernia surgeon may require ultrasound in challenging cases.

CAROTID DOPPLERS

Not indicated

Ultrasound imaging of carotid arteries forms part of a specialist clinical assessment and is not offered as a direct access test

PERIPHERAL ARTERIAL STUDIES AND VENOUS MAPPING

Not indicated

These studies form part of a specialist clinical assessment and are not offered as a direct access test

Neck Ultrasound

Ultrasound may be useful as a first line investigation for palpable neck lumps. However, many requests are received where ultrasound is unlikely to be helpful, delaying some patients being referred for a more appropriate investigation and subsequently prolonging waiting times for everyone.

At UHS, neck ultrasound is performed by trained sonographers or consultant radiologists. To ensure the patient is booked onto the most suitable list, and avoid requiring a repeat visit, the radiology team heavily relies upon the history given.

Please try to include the following information on referral for ultrasound:

- Relevant clinical history including potential risk factors if malignancy is a concern. (red flags signs should be urgently referred for clinical assessment under 2WW).
- Exact location of the lump.
- Estimated size of the neck lump and consistency (soft vs hard).
- Whether definite palpable lump or possible lump.
- Whether single or multiple lumps
- Clinical differential diagnosis

These guidelines have been carefully considered and updated following discussion with the relevant ENT, OMFS and Endocrine teams to aid the general practitioner in the decision-making process for neck ultrasound referral.

INDICATION	COMMENT	GP REFERRAL JUSTIFIED? RECOMMENDATION IF NOT
LYMPH NODES	<p>Small, mobile, likely benign lymph nodes do not require ultrasound assessment. These must be assessed clinically (not virtually or via telephone consultations) and can be monitored clinically</p> <p>Palpable lymph nodes with clinical concern regarding underlying malignancy/red flag signs require urgent 2WW specialist referral.</p>	<p>NO. Please perform clinical follow up in the first instance</p> <p>NO. Please refer to ONE STOP NECK LUMP CLINIC at UHS.</p>
THYROID		

<p>Thyroid swelling</p>	<p>Diffuse, gradually increasing thyroid swelling most likely represents a benign multinodular goiter but a small proportion may have underlying malignancy- If not investigated previously, an US is indicated.</p> <p>Routine imaging of known benign nodules or stable multinodular goitres is NOT recommended.</p> <p>New thyroid swelling +/- palpable enlarged lymph or rapid increase in size of known thyroid nodules.</p> <p>If any Red flag signs (hard swelling, palpable nodes, family history, childhood radiation exposure, voice change) refer urgently to under 2WW.</p>	<p>YES, if not previously investigated.</p> <p>NO.</p> <p>NO. Please refer to ONE STOP NECK LUMP CLINIC at UHS.</p> <p>NO. Please refer to ONE STOP NECK LUMP CLINIC at UHS.</p>
<p>Hyperthyroidism</p>	<p>Ultrasound is not indicated unless there is a palpable thyroid nodule- please see above.</p>	<p>In the absence of a palpable thyroid nodule, NO. Please refer to Endocrinology.</p>
<p>Hypothyroidism</p>	<p>Ultrasound is not indicated unless there is a palpable thyroid nodule- please see above.</p>	<p>In the absence of a thyroid nodule, NO.</p>
<p>Hyperparathyroidism and hypercalcaemia</p>	<p>Ultrasound is only indicated in biochemically proven primary hyperparathyroidism as part of a localisation procedure through a specialist.</p>	<p>NO. Please refer to a parathyroid specialist.</p>
<p>SALIVARY GLANDS</p>	<p>Mealtime salivary gland swelling suggestive of obstruction.</p> <p>For significant, recurrent obstructive episodes, specialist referral may be more appropriate in the first instance.</p> <p>Persistent/palpable salivary gland swelling may represent a primary salivary gland neoplasm and requires specialist assessment.</p>	<p>YES.</p> <p>NO. Please refer to ONE STOP NECK LUMP CLINIC at UHS.</p>
<p>SKIN LESIONS</p>	<p>Ultrasound is non-specific in its evaluation of skin lesions and therefore not indicated.</p>	<p>NO. Please refer to dermatology.</p>

	<p>Small subcutaneous lipomas can be assessed clinically and monitored by the patient to ensure stability.</p> <p>Lipomas greater than 5cm or known lipomas which have increased in size or have concerning features require specialist referral with a view to dedicated imaging and possible excision.</p>	<p>NO. Please monitor clinically</p> <p>NO. Requires specialist referral</p>
DIFFUSE SWELLING	Diffuse soft tissue swelling particularly within the supraclavicular fossae is common. In the absence of a palpable mass, ultrasound is not indicated.	NO.
NECK PAIN	Ultrasound is not indicated for neck pain in the absence of a palpable mass- this is likely musculoskeletal in nature.	NO. Please consider referral to community MSK service.
TMJ PAIN/DYSFUNCTION	Ultrasound is not indicated.	NO. Please consider specialist referral to Oral & Maxillofacial surgery.
BONY LUMPS	Ultrasound is not indicated for bony hard lumps or bone defects on the skull, forehead or cervical spine (eg transverse or spinous processes)	NO.

ADULT MUSCULOSKELETAL ULTRASOUND

SHOULDER

NICE guidelines for suspected intrinsic shoulder disorders recommend that the Oxford University Hospitals protocol is followed:

<http://www.ouh.nhs.uk> [Oxford Shoulder Clinic, 2010]

For the initial management of shoulder pain **without red flags** NICE recommends: analgesia, advice about occupational and daily activities, and consideration of physiotherapy referral +/- review in 2 weeks if pain is persistent (sooner if worsening). Common shoulder problems are self-limiting but the rehabilitation period may be 6 months or longer.

- Please note that the primary use of ultrasound is for investigation of rotator cuff tear for which there is a high sensitivity and inter- observer correlation.
- Diagnoses of 'impingement', adhesive capsulitis or degenerative change are not excluded by ultrasound and the diagnosis is usually arrived at clinically or on plain film.
- One of the objectives of the shoulder imaging guidelines is to offer an efficient ultrasound service for those patients with a rotator cuff tear who are most likely to benefit from surgical treatment and to refer those patients either in whom a rotator cuff tear is unlikely, or who may benefit from a surgical opinion as to their suitability for surgery direct to secondary care.

ELBOW

Not indicated

- Acute clinical distal biceps rupture should be referred urgently for orthopaedic opinion as there is a 3 week window of opportunity for repair. Ultrasound may be performed at specialist request to assess degree of retraction.
- Lateral epicondylitis is readily elicited clinically and does not require ultrasound confirmation.

FOOT AND ANKLE

Indicated

- Heel pain non-responsive to conservative measures may be assessed by ultrasound to exclude/confirm plantar fasciitis, peroneal or tibialis tendon damage and impingement syndromes.

Not indicated

- Morton's neuroma/Forefoot symptoms - Ultrasound is not felt to contribute significantly to the diagnosis of forefoot pain in the non-specialist setting. Either a referral to podiatry, intermediate or secondary care should be considered.

Notes

- Diagnosis of the patient presenting with metatarsalgia often presents a challenge.
- Differential diagnosis includes: metatarsal stress phenomena, MTP joint problems, abnormal biomechanics, tendon pathology, Morton's neuroma and other pathology.
- Ultrasound correlates poorly and may lead to overdiagnosis.

ACHILLES TENDON

Not indicated

Acute tears of the Achilles tendon require urgent orthopaedic assessment and ultrasound is usually performed immediately at their request. Chronic Achilles tendinosis is a clinical diagnosis. The tendon is easily palpable and ultrasound adds little to the diagnosis.

KNEE

Indicated

- The primary use for ultrasound of the knee is for assessing disorders of the extensor apparatus. Quadriceps and patellar tendinopathy/tears are well demonstrated
- Popliteal fossa lesions

Bakers' Cyst – not indicated. This commonly reflects fluid secondary to internal knee pathology. Routine MR from local service provider would be preferable as this will assess the Cyst and provide more information regarding the underlying state of the knee (GIRFT).

Popliteal aneurysm – indicated – vascular US referral.

DVT – indicated but should be assessed as part of the whole limb by referral for US Doppler.

Soft tissue lesions – indicated.

Not indicated

- Ultrasound does not detect intra-articular pathology such as ligament injuries, meniscal tears and degenerative change.

HIPS

Not indicated routinely

- Ultrasound should not be used routinely in the investigation of lateral hip/ greater trochanteric pain.
- Ultrasound is of limited value in the assessment of hip disease and is only used to confirm the presence of an effusion in a painful, potentially infected or inflamed hip.
- Lateral (greater trochanteric) pain is a common clinical syndrome where patients, with a strong female predominance, present with pain and tenderness over the greater trochanter.

The diagnosis is primarily clinical, and there is poor correlation ultrasound findings (which suffer from high inter-observer variability) and the clinical symptoms.

- A normal ultrasound does not exclude a diagnosis of gluteal pain syndrome. An ultrasound therefore does not add to management in the vast majority of cases.

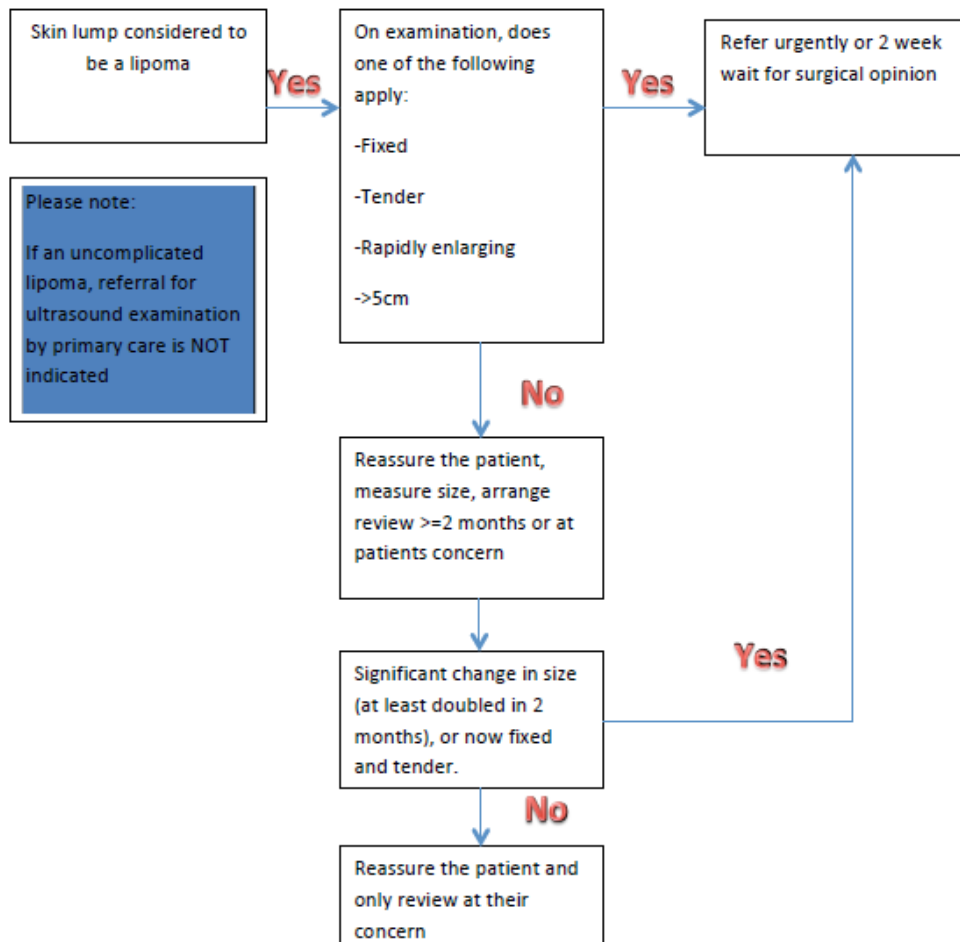
SYNOVITIS

- Ultrasound screening for synovitis is not performed by main ultrasound and referral to the rheumatology clinic is needed

LUMPS AND BUMPS AND ?LIPOMAS

Not indicated routinely

The diagnosis of a lipoma is usually made on the basis of clinical findings and is the most commonly scanned subcutaneous lump. It is usually possible to monitor these on a clinical basis. Please follow the advice below for the management of suspected lipomas.



-Breast lumps and axillary lumps with a history of previous breast cancer should be referred directly to the breast service at Princess Anne Hospital as urgent 2WW.

References:

1. NHS Dorset Clinical Commissioning Group Dorset Guidelines for GP Ultrasound Referral in Adults. 2016
2. Map of Medicine.
3. Royal College of Radiologists iRefer
4. NICE guidelines