

Abstract 4

Douglas Black, ST5, QEUH

The ongoing role and value of a regional radiology teaching library

Background

The West of Scotland (WoS) deanery maintains a large offline case library. As the hardcopy film era ends, does the availability of comprehensive free online resources obviate need for local libraries or is contemporaneous evolution of the case library required?

Methods

An online survey was sent to all WoS radiology specialty trainees and consultants within three years of CCST, allowing for more balanced feedback given the relatively junior registrar cohort. Results were collated anonymously.

Results

Overall response rate was 68% (64/93); 78% (57/73) for current trainees and 35% (7/20) for post-CCST trainees. 99% were aware of the library. The library is perceived to be a useful resource by 97% (55/57) by current trainees, with 53% (30/57) using the library at least weekly or monthly. A mixture of general revision and exam preparation were principal motivations. 94% (60/64) of responders felt the library should be used in addition to online resources.

Main barriers to library usage were location and availability of iMac computers, with many trainees unfamiliar with iMac operating system and Osirix DICOM viewer. Furthermore, the cases are not indexed by system and the database is not searchable.

Conclusion

Clear ongoing benefits include general revision and dedicated exam preparation. Perceived barriers could largely be overcome by improved trainee education, engagement and supervision. Subsequent development suggestions included improved trainee incentives with recognition of high quality submissions and online library access.

In summary, despite plentiful free online radiology resources, objective enthusiasm remains for locally curated case libraries.

Abstract 6

Shea Roddy, ST2, Ninewells

Prevalence of incidental thyroid malignancy identified on routine 18F- FDG PET-CT scans performed in a large teaching hospital

Purpose

To quantify incidental thyroid pathology including malignancy seen on routine 18F- FDG PET-CT scans. To compare Standardised Uptake Values (SUVmax) in thyroid malignancy subtypes.

Methods and materials

Retrospective study of all PET-CT scans (n=6179) performed in a teaching hospital between June 2010 and May 2019. RIS database search of reports for the word "thyroid" was performed. Studies with evidence of thyroid uptake were included. Patient age and gender, primary indication for PET scan (malignant or non-malignant), thyroid result on PET (diffuse or focal tracer uptake, SUVmax), ultrasound and FNAC results were recorded.

Results

Incidental abnormal thyroid tracer uptake as a proportion of all PET-CT scans was 4.37% (n=270). Out of region patients (n=87) whose records could not be obtained were excluded leaving a study group of n=183. 94 patients had focal uptake and 89 had diffuse uptake. 55 patients in the focal group were investigated further. Of these, 30 were thought to be benign on USS alone and 25 patients underwent USS/FNAC. 13 (24%) malignancies were identified (5 papillary, 6 follicular, 1 poorly differentiated thyroid cancer, 1 metastatic malignancy). Mean SUV value for papillary carcinoma was noted to be 8.24 g/ml and follicular carcinoma was 12.59 g/ml.

Conclusion

Incidental abnormal thyroid 18-FDG uptake in PET-CT scans of 4.37% is in keeping with literature. Rather similar number of patients was noted in the focal and diffuse tracer uptake categories in the final study group. Around quarter of the focal lesions were identified to be malignant, implying focal lesions should always be investigated further. Mean SUV max is seen to be slightly higher in follicular malignancy.

Abstract 8

Owen O'Brien, ST2, Hairmyres Hospital

Malignancy in contralateral lobe and role of surveillance US after hemithyroidectomy for thyroid cancer

Background

There is limited consensus on duration of surveillance neck ultrasound (US) in hemithyroidectomy-only differentiated thyroid cancer (DTC) patients.

Our aim was to determine follow-up US findings, when available, and identify rates of contralateral malignancy in patients with DTC at hemithyroidectomy.

Methods

A retrospective observational study of all patients who underwent hemithyroidectomy between 01/12/13–31/01/15 in Greater Glasgow & Clyde (GG&C) healthboard.

Results

49 patients had DTC identified following hemithyroidectomy (46) or isthmusectomy (3). Based on largest/worst prognostic cancer if multifocal, subtypes were papillary (36), follicular (8) and Hurthle cell (5) with mean diameter 23 mm (range 0.3 – 75 mm). 20 were papillary microcarcinomas (PMC), 16 of these incidental. 13 patients had multifocal lobar disease.

36/49 proceeded to initial completion thyroidectomy. 30 completions would have been recommended/reasonable with current guidelines. Further malignancy was found in 16/36 (44%) - all PMC.

Remaining 13 patients had US follow-up over 0.5 – 5.5 years. In one, a contralateral U3/Thy3f nodule on 1st surveillance US 2 years post-operatively had PMC at completion. A further case had a contralateral U2 nodule upgraded to U3/Thy3a at 3rd annual US/FNA, benign on completion. Otherwise normal appearances or sonographically benign nodules with no lymphadenopathy demonstrated.

Conclusion

In patients with hemithyroidectomy DTC not meeting criteria for initial completion, US/FNA follow-up prompted later completion in 2/13, with one case of completion malignancy – PMC. Otherwise US findings were limited.

Overall completion malignancy rate: 45% - all PMC.

PMC often undetectable at US and role of repeated post-hemithyroidectomy US surveillance is of doubtful benefit in this group.

Abstract 9

Oliver Llewellyn, ST1, WGH Edinburgh

Uterine Artery Embolisation for Women with Giant versus Non-giant Uterine Fibroids; a Systematic Review & Meta-analysis

Background: Evidence supporting uterine artery embolisation (UAE) for giant fibroids (>10cm and/or uterine volume >700CC) remains sparse. We performed a systematic review and meta-analysis of UAE outcomes for symptomatic giant versus non-giant fibroids.

Methods: The literature was systematically reviewed. Research studies of UAE as an adjunct to surgery, and those not using peri-operative MRI were excluded. Primary outcomes were fibroid size and uterine volume reduction, procedure time, length of hospital stay, reinterventions, patient symptom improvement/satisfaction and complications.

Results: We identified four observational studies (839 patients; giant=163, non-giant=676). Both groups demonstrated reduction in fibroid size and uterine volume after UAE, with equivocal difference in uterine volume reduction (mean difference (MD) -0.3 95% confidence interval (CI) -3.8-3.1, p=0.86) and greater reduction in non-giant dominant fibroid size (MD -5.9 95% CI -10.3 to -1.5, p<0.01). Giant fibroids were associated with 5.6 minutes longer mean operative time (MD 5.6 mins 95% CI 2.6-8.6, p<0.01) and 4.8 hours longer mean hospital stay (MD 4.8 hours 95% CI 1.1-8.6, p=0.01). Patient symptoms/satisfaction outcomes were summarised, but too heterogeneous for meta-analysis. Major complication and reintervention rates were low, with a statistically higher rate of major complications (Odds ratio (OR) 4.7 95% CI 1.5-14.6, p<0.01) and reinterventions (OR 3.6 95% CI 1.7-7.5, p<0.01) in giant fibroids.

Conclusions: Current evidence shows UAE is a safe and effective option to treat giant fibroids. However, the limited available data indicates a relatively higher risk of complications and reinterventions when compared with non-giant fibroids. Patients should be selected, counselled and managed accordingly.

Abstract 11

Thomas Walshaw, Surgical Clinical Fellow, RAH

Evaluation survey of locally produced 3D printed models created from trauma and elective computer tomography images in Orthopaedics for pre-surgical planning.

Background:

To evaluate the benefits of a local 3D printing service which used CT trauma and elective DICOM images to create 3D printed models, to both the lead surgeon and their trainee in orthopaedic cases. As well as to ascertain whether the model had any impact or change on the management of these cases.

Method:

Over a 12 month period if a patient had undergone a CT scan for an acute injury or to plan an elective procedure, a 3D model could be made of the bone(s) in question via the department's 3D printer. The surgeon was then given the time to evaluate their management of the trauma/elective case with the aid of the model. Once the surgery was completed, the surgeon and trainee were then asked to complete a Likert questionnaire to evaluate the model.

Results:

17 responses were acquired from 12 different cases, 12 from consultants and 5 from trainees. 4 cases were elective the rest were trauma. The models were evaluated as very accurate or accurate in >95% cases and in two cases changed the management plan that would have been different if only CT images had been used. 100% of trainees said the model aided in their understanding and learning of each case.

Conclusion:

The models contributed to the choice of appropriate management in each case and in some instances completely changed the management. They were accurate to what was found at the time of surgery and greatly aided the trainees' understanding.