



primary diagnosis of coronary artery disease (CAD) in patients with stable, recent onset chest pain. HeartFlow provides remote computer analysis of Computer Tomography Coronary Angiography (CTCA) data to create a three-dimensional model of the coronary arteries and model fractional flow reserve (FFR). Our Trust successfully developed a CTCA service and adopted HeartFlow technology - 58 patients underwent CTCA during the period between January and March 2020, the first complete quarter with HeartFlow implementation before the start of the COVID-19 pandemic. Five patients underwent HeartFlow analysis, only one went on to require invasive catheter angiography. The use of HeartFlow FFRCT identifies cases where no invasive interventional cardiology procedure is subsequently required, thus reducing the use of resource intensive invasive procedures and improving patient experience. This best practice abstract highlights the fact that CTCA and HeartFlow analysis should be considered as a non-invasive alternative to catheter angiography in the assessment of patients presenting with stable, recent onset chest pain. The analysis provided by HeartFlow extracts maximum value and information from CTCA data through the use of its models, aiding clinical decision making and therefore reducing the need for and burden on the invasive catheter angiography service.

1. Patel et al., (2020) 1-Year Impact on Medical Practice and Clinical Outcomes of FFRCT. JACC: Cardiovascular Imaging, 13(1), pp.97-105.

P067 Audit on Access to CTPA, Appropriateness of CTPA Requests and Whether Right Heart Strain was Reported

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Background: Pulmonary embolism (PE) is one of the important causes of morbidity and mortality. Computed tomography pulmonary angiography (CTPA) remains the investigation of choice for detecting PE.

Method: Retrospective data was searched on PACS from January 2019 to February 2020 (n=1680). Data exported to excel; RAND formula assigned to each patient to ensure randomisation. Data sorted by RAND formula column from largest to smallest. First 10% (n=168) reports were selected and reviewed. Teaching was delivered locally to clinicians. In the second cycle, retrospective data from September to October 2020 was selected and reviewed (n= 300).

Results: The percentage of CTPA requested and reported within 24 hours was 76.19%. Most of the delays were from between receipt of request and completion of scan. There were only 10.71% confirmed positive PE on CTPA. Alternative diagnoses on CTPA included respiratory infection and lung tumour. Only 48.30% of the CTPA report commented on the presence/absence of RHS. In the second cycle, there is decline seen in time between request and report, to 69.33%. 13.67% confirmed PE on CTPA is seen, showing slight improvement. There is marked improvement in reporting the presence/absence of RHS at 60.33%. Alternative diagnoses included Covid-19, heart failure and lung nodules.

Conclusion: Compared to standards set, there is suboptimal compliance. The likely reason for the fall in performance is due to the Covid-19 pandemic and time constraint from increased disinfection requirements. There is also over-requesting of scans.

1. National Institute for Health and Care Excellence, 2019. Pulmonary Embolism. Available at: <https://cks.nice.org.uk/pulmonary-embolism> [Accessed 31 March 2020].

2. Howard, L., Barden, S., Condliffe, R., Connolly, V., Davies, C., Donaldson, J., Everett, B., Free, C., Horner, D., Hunter, L., Kaler, J., Nelson-Piercy, C., O'Dowd, E., Patel, R., Preston, W., Sheares, K. and Tait, C., 2020. British Thoracic Society Guideline For The Initial Outpatient Management Of Pulmonary Embolism (PE).

3. The National Confidential Enquiry into Patient Outcome and Death, 2019. Know the Score. London.



DENTAL / HEAD & NECK / NEURO POSTER PRESENTATIONS

P068 A retrospective audit into the satisfactory completion of general dental practitioner's radiology request forms

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Introduction: The majority of General Dental Practitioners (GDP) radiology request forms are hand written. An audit was carried out to obtain reassurance on the effectiveness of communication between GDP and Radiographers. A retrospective audit was conducted of 300 requests over a 12 month period within one dedicated dental hospital.

Aim: The aim of this audit was to investigate whether or not GDPs meet the minimum requirements in requesting radiology request forms and evaluate current referral systems. Determine which fields of interest are frequently incomplete on request forms.

Results: The audit revealed the inadequate completion of request forms by GDPs, 19% (n=558) of 3000 fields were left blank. The results of this study support the need for a redesign of dental radiology request forms within the hospital in which the audit was carried out. The results suggested that it would be beneficial for dental referrers to receive ICE



requesting training and/or IR(ME)R training to increase their awareness of the importance of meeting the standards for requesting examinations and completing requests.

Conclusion: Electronic requesting for radiological examinations is common most modalities; this is not the case for dental requests as the majority are formalised letters or handwritten requests. Electronic requesting for dental radiological examinations should be encouraged or trialled to prove it can improve efficiency of communication between GDPs and operators. There is a significant problem in the lack of completion of GDP radiology request forms.

Department of Medical Imaging and Medical Physics (2019) Radiation Regulations Important Information for Referrers. [guidelines] X NHS Trust. The Ionising Radiation Medical Exposure Regulations (2017). [online] Available at: <http://www.legislation.gov.uk/uksi/2017/1322/made> [Accessed 4 September. 2019]. The Royal College of Radiologists (2017). iRefer: Making the best use of clinical radiology. 8th ed. London: The Royal College of Radiologists.

P069 Can PMCT provide the information required for dental analysis to confirm patient identification?

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Background: The identification of a deceased individual is one of the primary questions that must be answered. This can be complicated for many reasons, such as the circumstances of death and the number of casualties. Odontology is one of the primary identifiers, along with ridgeology and DNA evaluation (Interpol, 2018). Dental identification can be completed by a visual examination of the teeth and comparison with previous dental records. However, the accuracy of this assessment is considerably improved by imaging techniques, particularly if ante mortem imaging is available. Conventional dental radiographs have been a significant element of the dental identification process for many years to identify the presence and position of teeth/dental restorations, as well as to detect trauma and pathology. More recently, the use of Post Mortem Computed Tomography (PMCT) has become common in the general post mortem pathway and in forensic death investigations.

Purpose of poster:

Learning Outcomes:

- Explain the Disaster Victim Identification process
- Describe the options for odontological imaging of the deceased
- Propose an imaging protocol

Application to Practice:

- Demonstrate the set of images that can be used to support dental identification without adding significant time to the imaging pathway.

Summary of content: The poster will present an overview of the Disaster Victim Identification process, the role of odontology in identification of the unknown deceased, the rationale for using dental PMCT for odontological assessment, propose an imaging dataset that demonstrates dental findings satisfactorily and identify limitations with the technique.

Interpol, 2018. Disaster Victim Identification Guide, s.l.: Interpol.

P070 An Evaluation of the Role Imaging Plays in the Investigation of Vocal Cord Paresis

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Although many cases of vocal cord paresis are idiopathic, it is important to recognise that a vocal cord palsy can often be a sign (or the only sign) of more sinister underlying pathology, such as malignancy¹. For this reason, vocal cord paresis is a common indication for performing cross-sectional imaging in head and neck radiology. There is however no consensus opinion on a particular imaging strategy in this particular context, thus everyday practice widely varies across the UK². Even the RCR offers no guidance on specific imaging for patients presenting with a vocal cord palsy³. We conducted a retrospective analysis of the imaging undertaken for 226 patients presenting with a clinically proven vocal cord palsy over a ten-year period and discovered differences in imaging strategies even within our own NHS trust. This poster presents the salient findings of our service evaluation and outlines a simple imaging strategy we have now implemented into local clinical practice that offers potential time and financial savings without impacting diagnostic accuracy.

1. Dankbaar JW, Pameijer FA. 2014. Vocal cord paralysis: anatomy, imaging and pathology. *Imaging Insights* 5:743-751 2. Stimpson P, Patel R, Vaz F et al. 2011. Imaging strategies for investigating unilateral vocal cord palsy: how we do it. *Clinical Otolaryngology* 36:266-271 3. Royal College of Radiologists. 2017. iRefer: making the best use of clinical radiology 8th edition



P071 Cosmetic fillers masquerading as pleomorphic adenoma: A case-based discussion on the implications of the cosmetic industry in our NHS

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Background: Aesthetic Medicine is a rapidly evolving branch of medicine which utilises non-surgical techniques to enhance the appearance of the skin, face and body^[1]. We have seen an exponential increase in demand for such procedures in recent years, as well as the number of practitioners performing them. Little regulation of the industry currently exists and inevitably, in line with increasing procedures, we are seeing increasing complications. Currently there are no established pathways for follow up or management of complications, thus diverting such issues to NHS services.

Purpose of poster: We intend to present a case of a 33 year old patient who presented with a 3 month history of a painless left neck lump. Otherwise systemically well Targeted ultrasound demonstrated a superficial heterogeneous lesion. Histological analysis from fine needle aspiration raised suspicion of atypical pleomorphic adenoma. Subsequent



MRI demonstrated similar cystic lesions in the face and both sides of the neck. Further history revealed previously undisclosed cosmetic filler injection, in both cheeks.

Summary of content: The objective of this case report is to demonstrate complications of cosmetic procedures and to raise awareness of this novel diagnosis, to be considered in differential diagnoses. We will discuss the impact of investigation and misdiagnoses on the patients wellbeing as well as the National Health Service.

1. Prendergast, P.M. and Shiffman, M.A. (2011). Aesthetic Medicine. Springer-Verlag Berlin Heidelberg. DOI 10.1007/978-3-642-20113-4.

P072 The out of field CT head protocol: a retrospective audit

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The Out of Field Computed Tomography (CT) Head protocol (OOFH) is aimed at patients with hyperkyphosis, who are unable to fit within the head field of view (FOV). This protocol is not widely known in the radiography community. The aim was to investigate if the protocol was utilised appropriately and effect of the beam hardening artefact and spatial resolution on the image quality. The retrospective audit examined fifty-four OOFH CT scans undertaken between 1/2/19 --1/2/20 across two sites and four GE CT scanners. The audit included: patient demographics, time of scan, scanners used, radiographers, CRIS comments, the dose length product (DLP), Computed tomography dose index (CTDI)vol, if artefact was commented upon in the report. The IQ was assessed using Likert scale by a CT head reporting radiographer and CT radiographer. The protocol was used infrequently, there was a trend in specific radiographer over-usage. The average DLP was 510mGycm and CTDIvol 27.2mGy, indicative of being above isocentre. The was differing effects of the protocol on IQ and occasionally, minimal beam hardening. The differences in appear to relate to atrophy present and could relate to patient positioning. In summary, the presence of the cupping artefact is undeniable in this protocol. In some cases, the beam hardening does decrease the diagnostic sensitivity of the examination. However, the protocol has a clear advantage in providing diagnostic information where other protocols cannot. Further research and training are recommended. Limitations of the audit is it does not account for instances where the protocol was re-selected.

P073 CBCT referrals during COVID -- a clinical case report of undiagnosed dental pain

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The COVID lockdown has created difficulties for patients to access care. The objective of this clinical case report is to highlight the role of CBCT as an easily-accessible, fast, low-dose imaging technique that could have made a difference to some patients when treatment options were limited. At the beginning of the pandemic, a 57-year-old-woman developed pain in the upper right dental quadrant. Following a course of anti-inflammatory medication, limited (non-AGP) dental procedures were performed over time as the pain was not subsiding (UR8 removed in April 2020, the UR7 6 weeks later). In July, the upper molar sockets were cleaned and the UR6 was root-canal treated. In August, the patient was referred to a Maxillofacial Surgeon. 2D imaging suggested periodontitis and bone loss. The sockets had healed but a CBCT referral was done to investigate a palatal swelling and a tiny lump around the UR6-7. The CBCT (JMorita Accuitomo, 60x40mm FOV, 90kV, 5mA, 125microns) confirmed the presence of a large ill-defined radiolucency in the posterior right maxilla communicating with the maxillary sinus floor. The destruction of the



maxillary tuberosity suggested malignancy. From the CBCT scan, the surgeon was also able to plan the optimum 3D location for biopsy. Access to CBCT imaging during the lockdown was fast but non-specialist teams may not have been aware of its usefulness in problem-solving. This report encourages non-specialist clinicians to broaden their knowledge of CBCT which has wide applications in the head & neck and orthopaedics.

P074 Importance of continued compliance of trust guidelines in NG tube placement

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Background: The most common serious complication of a nasogastric tube is not identifying a misplaced tube within the lungs (Scott and Bowling, 2015). Those that are unable to aspirate a sufficient fluid are of uncertain positioning, and chest x-ray would be the most cost-effective method for further assessment (McFarland, 2017). When this is performed by an untrained clinician, particularly a junior one, there is reasonable risk of misinterpretation (Tierney et al., 2017). When this takes a prolonged period of time there is a loss of feeding time, and risk of chance of clinical staff self reporting. IT is important to have clear local guidelines and to ensure the correct implementation of these guidelines.

Purpose of poster: The learning outcomes are: - To show the benefit of good local NG placement guidelines to reporting practices - To show the importance of continued audit and local teaching of the guideline

Summary of content: The poster will detail the importance and risks of correct NG tube placement, and present the outcome of three successive audits into the reporting time of NG tube placement confirmation x-rays, showing clear improvement after local intervention, and then regression when the local interventions were no longer followed. The poster will be laid out with the background information and teaching about NG tubes, with further sections on the target standards, methodology, audit results shows pictorially, and the conclusions drawn with the actions taken.

1. McFarland, A., 2017. Journal of Advanced Nursing 73, 201–216.
2. Scott, R., Bowling, T.E., 2015. Journal of the Royal College of Physicians of Edinburgh 45, 49–54.
3. Tierney, M., Sibley, C., Leach, Z., Rutter, C., Pither, C., Smith, T., 2017. PTU-117 Chest xray interpretation of nasogastric tube placement by medical registrars: how safe is it?, in: Gut. BMJ, p. A108.2-A109.

P075 Extended-CBCT imaging pathway to guide interventions during radical radiotherapy to the head and neck

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Background: Head and neck cancer (HNC) patients experience anatomical changes and weight loss during radical radiotherapy; reducing precision of dose delivery to delineated volumes. 3D-imaging allows visual assessment of structures, however, the field of view of a head CBCT alone does not allow acquisition of all volumes. This audit of practice reviews an extended-CBCT pathway which replaced CT verification (CTveri).

Methods: Daily online matching (2DKV-KV) was performed on TrueBeams v.2.7. A post-treatment fraction 16 extended-CBCT was acquired by merging a superior head and inferior thorax scan online, encompassing all planning volumes. Images were assessed offline by a clinical oncologist (CO) to determine if CTveri to verify plan dosimetry was necessary. Electronic pathway tasks tracked the stage of image review and planning interventions.

Results: Seventy-one patients were evaluated between 25th May-7th September 2020, of which 69 had extended-CBCTs acquired and 2 patients had CTveri at the CO's request. Patient and treatment characteristics are displayed in table 1. Median days from acquisition to CBCT image review by the CO was 1 (IQR 0-3). Nine (13%) patients underwent a CTveri based on assessment of the extended-CBCT; 6 of these occurred in the first month. Median days

from the CTveri to the verification plan outcome was 2 (IQR 2-4). 4 patients received a plan revision (table 2).

Conclusions: The majority of patients did not require treatment interventions. The process has reduced verification CT's and increased CT resources. Image review is now undertaken by our advanced practitioner radiographer.

Table 1: Patient & treatment characteristics

Number of patients:	n=71	
Gender	Male	56
	Female	15
Mean age (range)	62 (37 - 84)	
Radiotherapy mean dose (Gy) (range)	64.33 [59.60 - 66.74]	
Fractions	30	
Treatment:	IMRT/VMAT	
Imaging:	CBCT Slice Thickness 2mm	
Sub-site	n (patients)	
Hypopharynx	4	
Oral cavity	11	
Salivary gland	3	
Larynx	8	
Post Pharyngeal Wall	1	
Oropharynx	32	
Unknown primary	3	
Nasopharynx	2	
External auditory canal	1	
Sinonasal	6	

Table 2: Patient re-scan reasons based on CBCT review

Patient	CT - justification	PTV volume change	OAR volume change	Plan re-optimised	New plan issued Y/N	Fraction plan revision commenced	Treated sub-site
1	Medic request - concerns regarding dosimetry.	No	No	No	No		Base of Tongue
2	Medic request - concerned by neck flexion. Check dosimetry.	No	No	No	No		Base of Tongue
3	Medic request - dosimetry check. Gaps at shoulders.	No	No	No	No		Oropharynx
4	Medic request - Gaps in shell, set up validation. Shell adjusted by mould room.	No	No	No	No		Base of Tongue
5	Medic request - Gaps in shell at shoulders & chest. Dosimetry check. Shell adjusted by mould room.	Yes	Yes	Yes	Yes	20	Base of Tongue
6	Medic request - Set up variation and neck flexion. Check dosimetry.	No	Yes	No	Yes	20	Oropharynx
7	Medic request - Gaps in shell at shoulders & chest. Dosimetry check. Shell adjusted by mould room.	No	Yes	No	Yes	10	Tongue
8	Medic request - dose looked closer to brainstem and spinal cord. Dosimetry check.	No	No	No	No		Tonsil
9	Medic request - Disease progression suspected. Dosimetry check.	Yes	Yes	Yes	Yes	9	Soft Palate

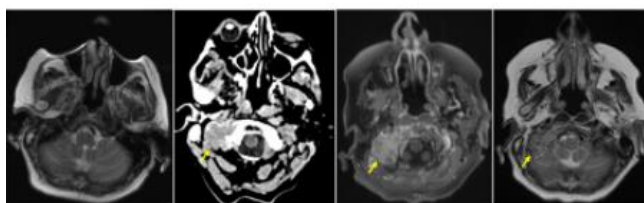


P076 Early Diagnosis of Collet-Sicard Syndrome Secondary to Metastatic Lung Adenocarcinoma: A Case Report

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Case presentation: A 60-year-old woman with treatment-naïve lung adenocarcinoma presented to her GP with a one-week history of headache. She was discharged with analgesia but re-presented with worsening pain. Past medical history include new diagnosis of T4N3M0 lung adenocarcinoma and migraine. The headache involved the right parieto-occipital region and cervical para-spinal muscles. She described intermittent numbness on her right tongue during mastication. Examination demonstrated reproducible pain on palpation but was unremarkable for neurological deficits, visual changes, meningism, and arteritis. MRI-head 6 weeks prior showed no intracranial disease and initial CT-head on admission was reported normal (Figures 1,2). Her pain remained refractory to opioids resulting in a repeat contrast-enhanced MRI-head revealing a large metastatic deposit on the right postero-lateral skull-base with dural infiltration and evidence of Collet-Sicard syndrome (Figures 3,4). She was started on high-dose steroids with symptom improvement and proceeded to have skull-base radiotherapy followed by systemic therapy.



Discussion: Collet-Sicard syndrome is a rare variant of jugular foramen syndrome with involvement of cranial nerves IX-XII. Skull base metastasis is unusual and often occurs in the context of prostate cancer or systemic cancer (1). In our case, the patient presented with radiological Collet-Sicard syndrome with intermittent tongue paraesthesia due to involvement of the glossopharyngeal nerve. This case highlights the

importance of MRI in at-risk patients even with a reported normal CT-head. Compared to CT, MRI has better tissue resolution and sensitivity for bone metastasis (2). Furthermore, contrast-enhanced MRI can work-up differential diagnoses (e.g leptomeningeal carcinomatosis) in oncological patients with unexplained

(1) Hayward D, Morgan C, Emami B, Biller J, Prabhu VC. Jugular foramen syndrome as initial presentation of metastatic lung cancer. *J Neurol Surg Rep.* 2012;73(1):14-18. doi:10.1055/s-0032-1301406

(2) O'Sullivan GJ, Carty FL, Cronin CG. Imaging of bone metastasis: An update. *World J Radiol.* 2015;7(8):202-211. doi:10.4329/wjr.v7.i8.202

P077 Introduction of radiographer screening for brain metastases in patients with a known primary cancer

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Background: Brain metastases are a known neurologic complication of cancer with an increasing number of MR brain scans performed each year to rule out the presence of metastases. A large percentage of these scans are for 'screening' purposes either for trial eligibility or maintenance of high risk patients. At the time all scans were reviewed by a radiologist whilst the patient remained in the department.

Method: A clinical audit was undertaken over an 8-month period. All referrals for scans to exclude a new diagnosis of brain metastases were included. Radiographers were prospectively asked to record whether an examination was normal, metastases were present, or whether any confounding pathology was present. Radiographer opinions were then compared with the "gold standard" of the radiologists' final report.

Result: A total of 429 patients were included in the audit. For normal versus abnormal the radiographers demonstrated an accuracy of 91%, with sensitivity 81% and specificity of 94% showing 'substantial agreement'. For the presence of metastases radiographers demonstrated an accuracy of 88%, with sensitivity 98% and specificity of 76% indicating 'substantial agreement'.

Conclusion: Trained radiographers showed a high accuracy in screening MR brains to exclude brain metastases. This led to a change to the patient pathway as the radiologist is now only contacted in the event a scan may be positive. This change has resulted in improved efficiency in both radiographer and radiologist workflows and patient waiting times reduced.

P078 Thrombosis of the Forgotten Vein!

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Cwm Taf Morgannwg UHB

We present three patients with Internal Cerebral Vein Thrombosis (ICV) whose initial scans were reported as normal. Diagnosis was made by confirmatory CT Venography. On retrospective review of these cases the ICV thrombosis was clear on the non-contrast CT Head, the clinical presentation of these patients was also fairly typical. These 3 cases highlight the importance of being aware of the clinical presentation of ICV thrombosis, once the symptoms are appreciated the signs of ICV thrombosis become clear. Look and you will see! We summarise the location, appearance



and anatomical vascular drainage of the internal cerebral veins. Acute thrombosed veins will be of high density on CT and usually associated with thrombosis of one or both of the transverse sinuses. There can be low density in one or both of the thalami which can be misreported as a glioma.

Kumar, P et al (2017) Deep Cerebral Vein Thrombosis: A Clinical Masquerader. *Journal of Clinical and diagnostic Research*; 11(4): 16-18.

P080 Imaging of recurrent ischaemic stroke may have implications of a factor V Leiden mutation

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Background: Factor-V Leiden (FVL) syndrome, representing gene mutation for coagulation factor-V, is associated with thrombophilia and venous thromboembolic disease. Accumulating evidence indicates that FVL mutation may predispose children and young adults to cerebral arterial ischaemic stroke.

Purpose of poster: We discuss the clinical-imaging presentations of recurrent cerebellar infarction in a young patient with FVL thrombophilia. Demographics show that 3% to 8% of the Caucasian population are heterozygotes of inherited thrombophilia, having up to 10-times increased risk for developing clots, whereas homozygotes have a 50- to 100-fold risk of thrombosis. FVL mutation is associated with an increased risk of stroke especially in women, smokers, and younger individuals. Ischaemic stroke resulting from inherited thrombophilic disorders, however, may involve any arterial territory and often affects multiple territories. The primary aims of imaging patients with thrombophilic disorders are to establish definite diagnosis of a single or recurrent ischaemic event, and to provide clues with regard to possible prognostication, treatment and long-term prophylaxis. A 24-year-old woman with prior history of ischaemic stroke in distribution of the superior cerebellar artery was found unresponsive at her home. On admission she was lethargic and confused with limb ataxia. Brain CT excluded acute haemorrhage and revealed a large infarct, in distribution of the posterior inferior cerebellar artery. MRI/diffusion-weighted imaging confirmed diagnosis of recurrent cerebellar stroke. PCR documented heterozygous FVL mutation. Patient was started on anticoagulants. **Summary of content:** Neuroimaging provided strong evidence of recurrent ischaemic stroke in a young patient, raising suspicion of inherited coagulopathy, which prompted appropriate management.

1. Ghalaut P, Duhan J, Chaudhary V, et al (2014). Ischemic stroke in a patient with heterozygous V Leiden mutation: an uncommon association. *Ind J Hematol Blood Transfus* 2014; 30:S335-337 2. Hamedani A, Cole J, Mitchell B, et al (2010). Meta-analysis of factor V Leiden and ischemic stroke in young adults. *Stroke* 41:1599-1603 3. Marinella M, Greene K (1999). Bilateral thalamic infarction in a patient with factor V Leiden mutation. *Mayo Clin Proc* 74:795-797

P081 Giant arteriovenous malformation with stroke-like presentation: CT and MR findings

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Background: Arteriovenous malformations (AVMs) are congenital vascular abnormalities occurring with a prevalence of 0.68/100,000 patients. When symptomatic, AVMs present before 40 years of age. Because AVMs may mimic acute ischaemic or haemorrhagic stroke, angiographic studies are mandatory to establish correct diagnosis.

Purpose of poster: We revisit cerebral AVMs and flag for the attention of radiologists who need to be aware of occasionally misleading, stroke-like case presentations. In the emergency setting, brain CT studies need to be supplemented with angiography (CTA) to depict underlying vascular structural anomaly in detail, and prevent intravenous fibrinolysis that could cause intracerebral haemorrhage and death. Patients with AVMs may present with acute onset of headache, slurred speech, weakness, and seizures. On CT, AVMs may not be readily apparent as the nidus is moderately hyperdense compared to adjacent brain and anomalous, shunting vessels can be obscure. With CTA, diagnosis of AVMs is straightforward, with depiction of the nidus assuming characteristic "bag of worms" configuration, and anomalous feeding and draining vessels. A 47-year-old woman with stroke-like symptoms underwent brain CT. A large, hyperdense lesion resembling brain haematoma with an adjacent subdural haematoma and brain midline shift were initially appreciated. CTA (with maximum intensity projection-MIP and shaded surface display-SSD images) revealed a giant, complex cerebral AVM with markedly dilated feeding arteries and draining veins. There was no haemorrhage or haematoma. MRI confirmed diagnosis of complex AVM. Patient was prompted for neurosurgery consultation.

Summary of content: Brain AVMs may masquerade as stroke and need to be investigated with dedicated angiographic survey.

1. Mirzaa G, Conway R, Graham JM, et al (2013). PIK3CA-Related Segmental Overgrowth. In: Adam MP, Ardinger HH, Pagon RA, Wallace SE, Bean LJH, Stephens K, Amemiya A, editors. *GeneReviews*. Seattle (WA): University of Washington, Seattle 2. Mirzaa G, Timms AE, Conti V, et al (2016). PIK3CA-associated developmental disorders exhibit distinct classes of mutations with variable expression and tissue distribution. *JCI Insight* 1(9):e87623 3. Park HJ, Shin CH, Yoo WJ, et al (2020). Detailed analysis of phenotypes and genotypes in megalencephaly-capillary malformation-polymicrogyria syndrome caused by somatic mosaicism of PIK3CA mutations. *Orphanet Journal of Rare Diseases* 15:205



P082 Under Pressure!

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Caroticocavernous fistulas (CCF) represent an abnormal communication between the carotid circulation and the cavernous sinus. Radiology plays a vital role in suggesting the diagnosis within the correct clinical context. We aim to radiologically classify the 'Direct' and 'Indirect' CCF. We will detail the typical clinical presentation which includes isolated cranial nerve palsies which traverse the cavernous sinus (CN's 3, 4, and 6) and proptosis. We also aim to provide a systematic process for reviewing a CT Head scan that gives the reporting radiologist/radiographer the best chance of suggesting the CCF diagnosis.

P083 Rare aortic arch and circle of Willis variants and their implications in clinical practice

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Background: Variant aortic arch anatomy is common with only 75% of the population having "normal" anatomy. Aortic arch variants have important associations with congenital heart disease and implications for the course of surgical and interventional procedures. Circle of Willis (CoW) anatomical variants are equally prevalent and have implications for the maintenance of intracerebral perfusion, with complete CoW associated with lower risks of intracranial haemorrhage following thrombolysis as well as implications for neuro-interventional approaches.

Purpose of poster: We aim to describe a variety of aortic arch and circle of Willis anatomical variants identified on aortic arch and intracranial CT angiography, including their implications for clinical practice and the likely embryological origins and their associations. Such examples include right sided aortic arch, agenesis of the left common carotid artery with the left internal and external carotid arteries arising from the aortic arch, duplicated MCA, aberrant right subclavian artery with concurrent common origin of the brachiocephalic and left common carotid artery, left vertebral artery origin from the aortic arch with contralateral vertebral artery dominance, hypoplastic and accessory intracranial arteries.

Summary of content: This educational poster will include CT angiographic imaging of these anatomical variants of the aortic arch and the circle of Willis, subsequent changes seen in the remaining vasculature, the proposed embryological origins of the underlying vessels and the importance for cerebral perfusion and pre-surgical/interventional planning. The ultimate aims are to provide a greater insight for the UKIO delegate of these variants, leading to improved recognition and ultimately to better patient care.

P084 Sensorineural hearing loss? The curious case of the cavernous malformation

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Barts Health NHS Trust

Background: Superficial siderosis (SS) is a rare condition in which there is deposition of haemosiderin within the subpial layers of the central nervous system, which can lead to sensorineural hearing loss (SNHL). Cerebral cavernous malformations (CCMs) may present with headache or neurological deficit. Atypical locations can easily baffle the uninitiated radiologist, and knowledge of emerging imaging techniques can significantly aid in diagnosis and patient management.

Case presentation: A 32 year old male presented to the emergency department with a four week history of intermittent headache with recent progressive SNHL. Computed tomography (CT) showed an 8mm hyperdense nodule adjacent to the frontal horn of the right lateral ventricle. Dual-energy spectral CT indicated the lesion had a combination of calcification and haemorrhage. Magnetic resonance imaging (MRI) also demonstrated susceptibility artefact and blood products in the lateral ventricles and susceptibility artefact along cerebellar folia, suspicious for SS, with no other lesion to account for the SNHL.

Learning points:

- 1) Clinical and radiological manifestation of CCMs and SS.
- 2) Use of dual-energy CT to aid diagnosis of CCMs.
- 3) SS is a potential cause of SNHL.
- 4) Susceptibility- and T2-weighted imaging are most sensitive in detecting SS.
- 5) If SS is suspected, complete imaging of the neuroaxis should be undertaken to find the underlying cause.

Summary: Our educational poster will describe an unusual case of a CCM leading to SS and unilateral SNHL, with CT, dual energy CT and MRI images, and highlight important learning points for the radiological diagnosis of both entities.