Letters

STAPHYLOCOCCUS AUREUS ENTEROTOXINS IN PEOPLE WITH CYSTIC FIBROSIS (CF)

Editor,

Staphylococcus aureus (SA) is a Gram-positive bacterium, which produces several enterotoxins inducing nausea. We hypothesize that patients with cystic fibrosis (CF) who are chronically infected with enterotoxin-producing SA in their airways may expectorate sputum containing enterotoxins, especially during sleeping, which may be ingested, subsequently leading to nausea. Therefore, we wished to examine if SA isolates obtained from CF sputum are enterotoxin-producers, which have the potential to cause nausea in their host.

We examined 16 clinical SA isolate from sputum of CF patients (n=16), who were infected with SA. SA cultures were examined for enterotoxins A, B, C, D and E by ELISA assay, in accordance with the manufacturer's instructions (RIDASCREEN® SET Total (R-Biopharm AG, Darmstadt, Germany). Of these, 10 (62.5%) isolates were positive for at least one enterotoxin, with the remaining six isolates negative for enterotoxin(s). There was no statistically significant difference (p=0.8) in lung function (FEV1%) between patients chronically/intermittently colonised with enterotoxin –producing SA strains and non enterotoxin-producing SA strains (Figure 1).

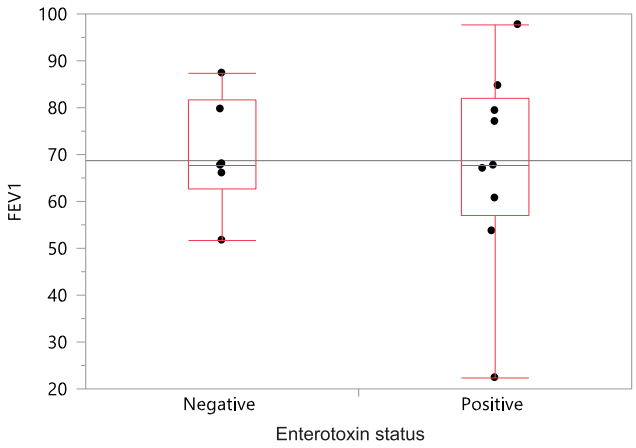

Figure 1: Comparison of lung function (%FEV_1) in patients with cystic fibrosis infected with enterotoxin-producing *Staphylococcus aureus* and non-enterotoxin-producing *Staphylococcus aureus* (p=0.82)

The exact amount of SEs required to produce emesis is not specific, largely due to individual variations in sensitivity to enterotoxins, however a study looking at a staphylococcal gastroenteritis outbreak discovered that doses of around 0.1µg of SEA were sufficient to produce nausea.[1] A review in 2012 found that most studies quoted the total amount of SEs required for symptomatic gastroenteritis to occur to be around 0.1µg, however one exception suggested the figure to be as high as 10-20µg.[2] In terms of numbers of enterotoxin-producing SA required to produce GI symptoms including nausea, this has been estimated to be *circa* 10^5 colony forming units (CFUs) per gram of food[2]. In the CF lung, previous work from our group has shown that with chronic SA infection, the mean number of organisms is 1.01 x 10^7 CFU per gram of sputum.[3]

In our CF population, 46.1% of adults and 44.7% of children are infected/colonised with SA. Data from the current study demonstrated that 62.5% of SA isolates were enterotoxin producers, equating to an occurrence of 28.8% and 27.9% SA enterotoxin-producers in adults and children, respectively. Interestingly, a study of 48 SA isolates from young and healthy Irish students between 1995 and 2004 found that 66.7% of isolates harboured the classical SE genes (SEA – SEE).[4]

Nausea in CF patients can be associated with several aetiologies, including distal intestinal obstruction syndrome (DIOS), chronic inflammation of the GI tract and antibiotic usage, as well as other less frequent causes of nausea, such as eosinophilic esophagitis. Given the relatively high occurrence of SA from sputum in the CF population, the high occurrence of enterotoxin producers within these SA isolates, combined with the frequent reporting of nausea, we are now exploring if this could be contributing to nausea in our CF patient population. Further work is now required to determine the stability of SA enterotoxins produced in the CF lung, particularly their persistence against denaturation by the proteolytic environment within the lung, including their intact passage from the lungs into the GI tract.

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OESOPHAGITIS DISSECANS SUPERFICIALIS – AN UNUSUAL ENDOSCOPIC FINDING

Editor,

Oesophagitis dissecans superficialis (ODS) is a desquamative oesophageal disorder, characterised by sheets of sloughed squamous tissue with normal underlying mucosa.[1] It is extremely rare and benign.[2] We describe a case of ODS and discuss the condition.

An 83-year-old female was admitted to hospital with a 4 day history of vomiting and central cramping abdominal pain.

On abdominal examination, there was epigastric tenderness with intermittent guarding. Abdominal radiograph showed faecal loading.

The impression was gastritis and constipation. A Computed Tomography scan of the abdomen and pelvis was carried out, due to suspicion of ischaemic bowel and showed no acute intra-abdominal pathology. The scan report noted that the stomach fundus appeared slightly thick-walled and advised an oesophago-gastro-duodenoscopy (OGD).

The OGD showed ODS in the oesophagus (Figure 1), and a small hiatus hernia. The stomach and duodenum appeared normal. Biopsies were taken. The oesophagus showed patchy acute mild inflammation with epithelial hyperplasia and parakeratosis. Periodic acid-Schiff stain showed scattered *Candida* organisms. The gastric body mucosa showed some cystic dilatation of glands suggestive of a fundic-type polyp, with no evidence of dysplasia.

The patient was prescribed laxatives and anti-emetics. Over several days, her nausea and constipation resolved.

ODS is a desquamative oesophageal disorder, involving sloughing of the superficial mucosa.[1] It is extremely rare, with one study reporting an incidence of 0.03%.[3] It usually affects adults after age 50 and is slightly more common in women than men.[3]

ODS can be idiopathic or secondary to oesophageal mucosal

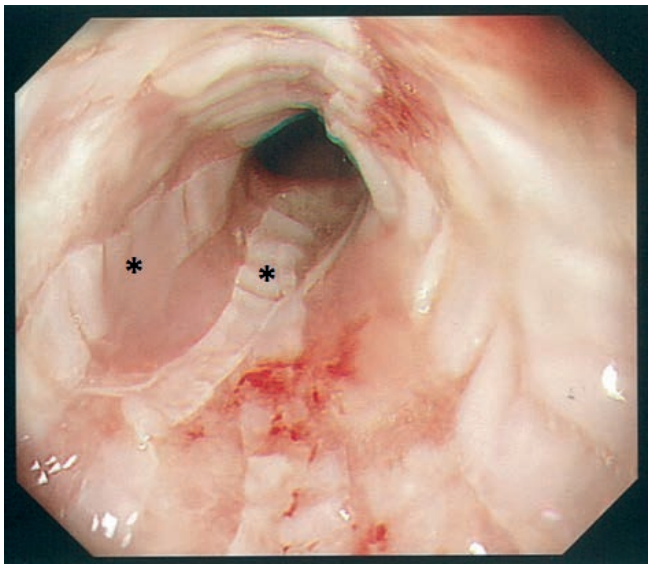

Fig 1. Endoscopic image of the oesophagus, showing sheets of sloughed mucosa (see asterisks), with normal underlying mucosa

injury which may be due to bisphosphonates and non-steroidal anti-inflammatory medications, certain foods, or repeated vomiting.[4] It is also associated with systemic diseases, such as pemphigus vulgaris and coeliac disease.[1] In this case, the patient was not taking any associated medications and did not have any associated systemic diseases.

It is usually asymptomatic and discovered incidentally, which was likely to be the case in our patient. It can occasionally be associated with dysphagia, nausea, bleeding, vomiting, heartburn, epigastric pain, and odynophagia.[2,3] The abdominal pain in our patient's case was felt more likely to be due to constipation rather than her ODS, as the pain improved following successful laxative use.

It has been suggested that meeting 3 of the following endoscopic criteria is consistent with ODS: "(1) strip(s) of sloughed oesophageal mucosa >2cm in length; (2) normal underlying oesophageal mucosa; and (3) lack of ulcerations or friability of immediately adjacent oesophageal mucosa."[1] Biopsies are not always necessary, but should be performed if the patient is symptomatic, a coexisting diagnosis may be present, or the endoscopic features are not classical.[1]

The most common histological findings are parakeratosis and intraepithelial splitting, although these are non-specific.[1] Biopsies may show inflammation, and there may be associated fungal elements.[5] In our patient's case, *Candida* was noted.

Whilst there are no clear guidelines for the management of ODS, it has been reported that stopping any potential causative medications and use of acid-suppressing medications results in resolution. ODS is benign and does not cause permanent damage.[2]

It is important to raise awareness of ODS. One study reported that only 41.5% of cases were correctly identified at endoscopy.[1] Gastroenterologists' unfamiliarity with this condition may cause it to be mistaken for other diseases[3].

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COLLATERAL THINKING

Editor,

We present a rare and challenging case of a patient presenting with ectopic variceal haemorrhage. A 57 year old man with a background of alcohol related liver cirrhosis (Child Pugh A6, MELD 10) presented with 3 episodes of frank bleeding from his umbilicus over a 4 day period. Variceal surveillance with OGD in March 2017 was negative and other significant medical history included alcohol dependence, morbid obesity, type 2 diabetes mellitus and COPD.

Abdominal examination showed caput medusae that had been oversewn in the emergency department; there was no detectable ascites or asterixis. Doppler ultrasound of liver revealed patent hepatic vasculature. Subsequent CT confirmed cirrhotic appearances of the liver with features of portal hypertension, recanalisation of the umbilical vein and varices measuring up to 2cm in diameter within an umbilical hernia (Figure 1 and 2).

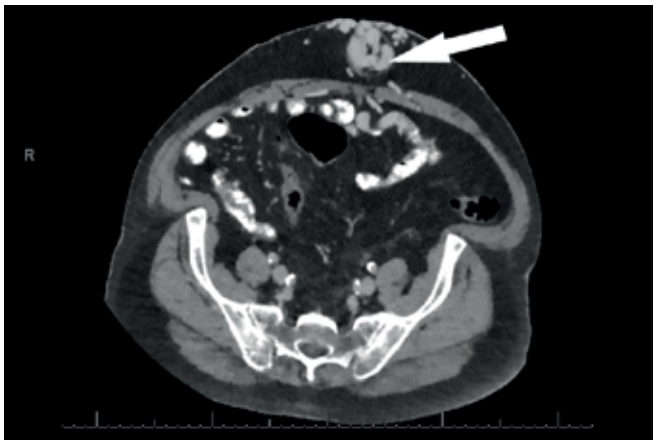

Fig 1. CT showing sizeable umbilical varices (white arrowhead)

Following a further episode of bleeding from the umbilicus 48 hours post-admission, his haemoglobin fell from 113 g/L (130 – 180 g/L) to 62 g/L. He was managed as per gastro-intestinal variceal haemorrhage with transfusion of packed red cells, terlipressin and prophylactic antibiotics.

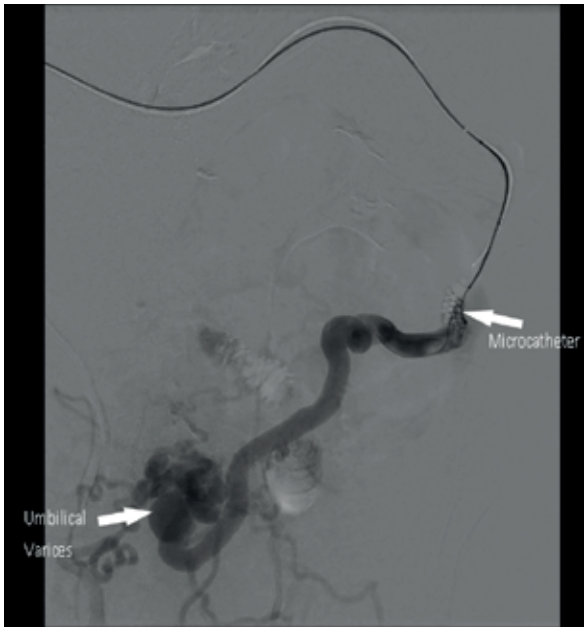

Fig 2. Catheterisation of umbilical varices

To prevent further bleeding a transjugular intrahepatic portosystemic shunt (TIPSS) was arranged. An echocardiogram, performed as part of a pre-TIPSS work-up, established that biventricular function was normal. He remained haemodynamically stable and proceeded to TIPSS (Figure 3) which proved to be technically successful with the aid of CT fusion imaging (Figure 4). A significant hepatic venous pressure gradient in excess of 30 mmHg was recorded prior to stent deployment. Venography demonstrated a large portosystemic collateral vessel which eventually reached the level of the multiple varices at the patient's umbilicus. A

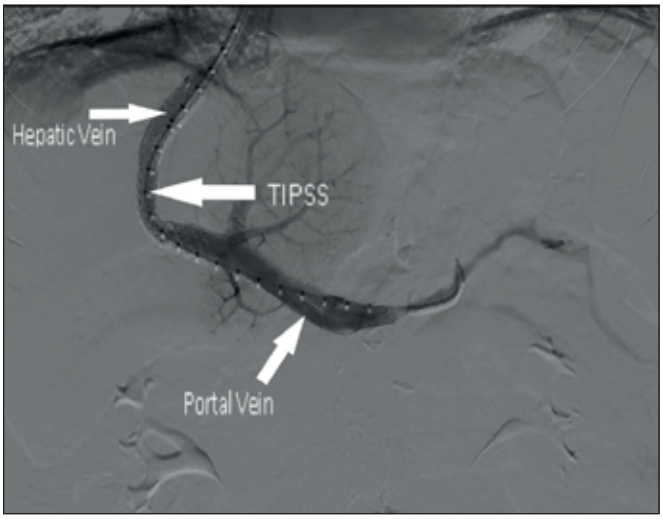

Fig 3. TIPSS insertion

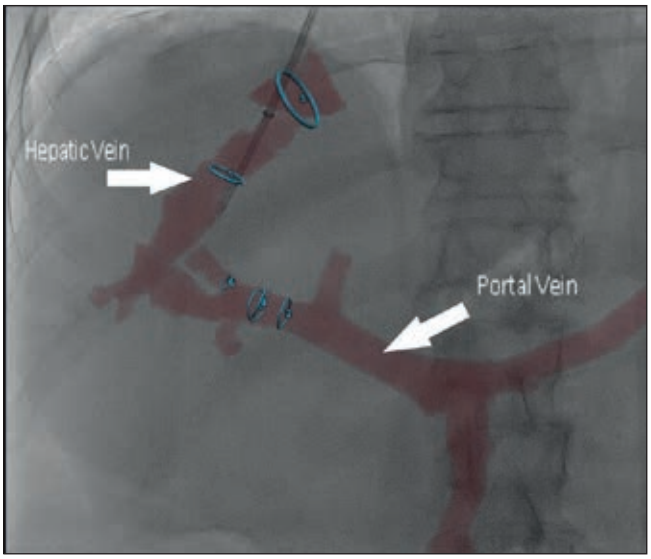

Fig 4. CT guided fusion imaging

microcatheter was negotiated along this allowing coiling and fibrovein foam embolisation (Figure 2). Following TIPSS and embolization (January 2018) bleeding was controlled and the patient was successfully discharged.

To date, liver cirrhosis remains compensated with no post TIPSS hepatic encephalopathy in spite of relapse to low level alcohol consumption. He is currently Child Pugh A5 offering a 1 year survival of 95% and 2 year survival of 85%. No further variceal surveillance is required as portal hypertension has been addressed.

Gastroesophageal variceal bleeding is a common complication of patients with chronic liver disease. Bleeding from any location where there are portosystemic anastomoses and collateral vascular formation is possible.[1] Variceal bleeding from locations other than the gastrointestinal tract (ectopic variceal bleeds) whilst rarely considered, account for up to 5% of all variceal bleeding. In addition, haemorrhage can be massive with mortality reaching up to 40%.[2]

Treatment is generally guided by local expertise due to absence of large studies. Initial interventions such as suture haemostasis and cauterisation have success for only a limited time frame. Medical treatments implemented to lower portal pressure include vasoconstrictors (terlipressin) in the acute setting and beta blockers (propranolol, carvedilol) in the chronic setting.[1, 2, 3]

Radiological interventions such as shunting (TIPSS) and percutaneous umbilical vein embolisation with sclerotherapy have been documented. A greater than 50% reduction in pressure gradient has been demonstrated to protect patients from rebleeding.[1]

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PRIMARY PANCREATIC LYMPHOMA

Editor

We present a case of a rare primary pancreatic malignancy which provides a challenging diagnosis given a non-specific presentation and lack of unique identifiers on imaging.

An 80-year-old gentleman presented with painless jaundice (Bilirubin 85 µmol/l, Alkaline Phosphatase 235 U/L, Aspartate Aminotransferase 124 U/L, Alanine Aminotransferase 132 U/L, and Gamma-Glutamyl Transferase 326 U/L).

Abdominal ultrasound confirmed a large mass related to the head of the pancreas. Computed Tomography (CT) chest, abdomen and pelvis showed a pancreatic mass with vascular involvement and presence of a gastric antrum lymph node.

Endoscopic Ultrasound (EUS) with Fine Needle Biopsy (FNB) of the pancreatic mass was performed (Figure 1 and Figure 2). Figure 1 shows a 3.7cm hypoechoic mass with no vascularity on Doppler imaging, suggesting that the mass is not a neuroendocrine tumour. Figure 2 shows the mass infiltrated by a biopsy needle and a smooth non-infiltrative border, atypical of adenocarcinoma.

Histology and immunochemistry of the pancreatic mass confirmed a high-grade B cell Non-Hodgkin's Lymphoma stage IV A.

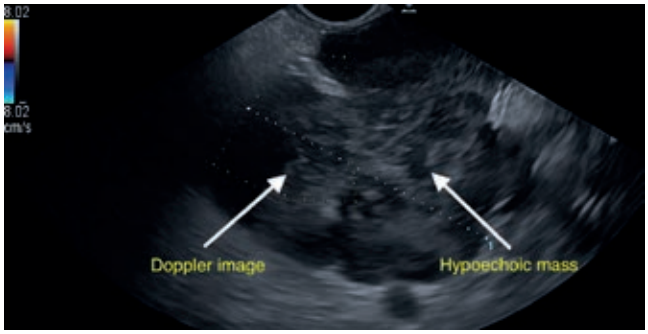

Figure 1

He was referred to haematology for treatment and following cycle 4 of chemotherapy, a follow up Computed Tomography scan of his Chest, Abdomen and Pelvis showed a significant reduction in size of the Primary Pancreatic Lymphoma.

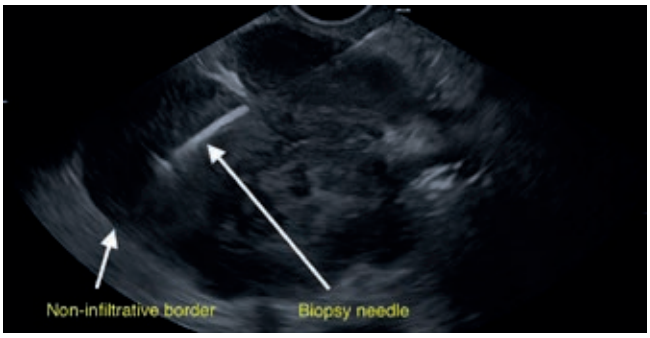

Figure 2

DISCUSSION

Primary Pancreatic Lymphoma (PPL) is a rare subtype of primary pancreatic malignancy, consisting of <0.5% of all pancreatic cancers), usually found in males aged 35-75.[1,2]

The diagnostic criteria for PPL are:

1) Neither superficial lymphadenopathy nor enlargement of mediastinal lymph nodes on chest radiography.

2) Normal leucocyte count in peripheral blood.

3) Main mass in the pancreas with lymph-nodal involvement confined to the peri-pancreatic region.

4) No hepatic or splenic involvement. [3]

They present in similar ways to the head of pancreas adenocarcinoma, with symptoms such as jaundice, pancreatitis, abdominal pain, abdominal mass and diarrhoea, though rarely have typical B-symptoms of Non-Hodgkin's Lymphoma such as night sweats or fevers.[2]

Serum tumour markers are not particularly useful in PPL as they are not always raised, and CT scan can confirm presence of distal node involvement therefore pointing away from a PPL.

Endoscopic ultrasound (EUS) combined with fine needle biopsy (FNB) improves diagnostic accuracy on top of an FNA alone.[2] EUS is less invasive and can characterise the lesions present. Once a FNB has been obtained from EUS, it will be sent for Flow Cytometry (FC) and immunohistochemistry in order to aid diagnosis and treatment.

The treatment for PPL is cycles of chemotherapy under the guidance of a haematologist, without evidence for surgical resection. [4]

The prognosis for PPL is much better than that for pancreatic adenocarcinoma. A case series from 2005 showed a mean survival rate of 69-80 months for patients who received chemotherapy as a first line treatment for PPL.[5]

CONCLUSION

As shown in this case, histological sampling of a pancreatic mass must always be made given the difference in treatment and prognosis between adenocarcinoma and PPL. Given the small amount of tissue involved, samples should be sent for immunohistochemistry and flow cytometry to aid diagnosis and treatment.

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FEASIBILITY OF COLOUR DOPPLER ULTRASOUND FOR DETECTION OF INTRAARTICULAR SACROILIAC JOINT INJECTION: A CASE SERIES.

Editor,

We would like to share our experience of colour Doppler ultrasound (CDU) in the detection of correct needle placement for sacroilliac joint (SIJ) injection during interventional procedures for management of low back pain (LBP).

Injection of steroid mixed with local anaesthetic (LA) is a well-recognised method for both diagnostic and therapeutic management of SIJ pain. Several imaging modalities have been used to guide such interventions in SIJ.[1] Fluoroscopic guidance is still considered as gold standard to confirm needle placement and spread of the dye. The majority of such imaging techniques involve use of ionising radiation. Ultrasound is however being used increasingly.[2] In many interventional pain procedures it is replacing ionising modalities because of the portability allowing the procedure to be performed at bedside without such hazards.[3] However, ultrasound has ta potential limitation in viewing the needle trajectory and the spread of the injectate inside the bony SIJ. CDU can overcome this problem by allowing visualisation of the flow of the injectate.[4] We thus decided to conduct this case study to find out the utility of CDU.

After obtaining approval from ethical committee and informed consent, 10 adult patients scheduled to undergo SIJ injection were included. After positioning the patients in prone position and using proper aseptic cleaning and draping, a low frequency curvilinear ultrasound transducer was used to localise the target SIJ anatomy. After skin infiltration with LA, a 22-gauge Quincke spinal needle was advanced towards the SIJ under ultrasound guidance. Once the needle was seen to enter the SIJ, colour Doppler mode was activated. A 1.5 mL mixture of steroid and LA was then injected. Positve Doppler signal suggesting the flow within the SIJ along with absence of any overflow outside the bony landmarks were noted (**Fig 1**). Then an independent observer who was blinded about the study methodology, confirmed the intra-articular placement of the needle fluoroscopically by injecting radioopaque contrast. Efficacy of the injection in providing pain relief, was assessed at follow up.

Demographic details of the patients are depicted in **Table 1**. CDU flow pattern indicated correct intra-articular injection without any extra-articular flow pattern in all our patients. Subsequent fluoroscopy and dye injection also confirmed correct needle placement. Preprocedural visual analog score (VAS) (6.7±1.05) reduced significantly after the injection

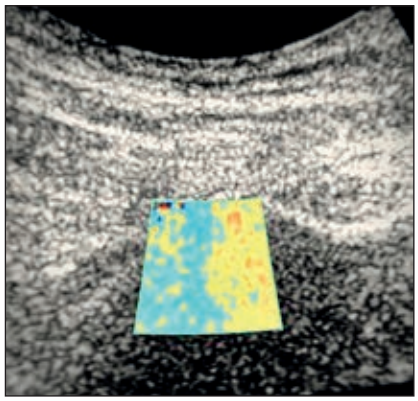

Fig 1: Use of color Doppler flow to locate needle placement.

(2.3±1.03) (p <0.0001) (**Table 2**) confirming the efficacy of the procedure.

In this case series, we found that CDU can be used successfully to confirm correct intra-articular placement of needle and subsequent injectate in SIJ.

Table 1: Demographic data and Pain scores.

		p value
Age (Years)	55.7±11.81	NA
Male	4	NA
Female	6	NA
Pre-Procedure VAS score	6.7±1.05	<0.0001
Post-Procedure VAS Score	2.3±1.03	

VAS: Visual Analog Score. Data expressed as mean±standard deviation or discrete variables wherever application.

This utility of CDU has not been reported to date. Arslan *et al*. used duplex and colour Doppler ultrasound to demonstrate vascularity inside and around the SIJ to diagnose sacroilitis and to monitor the therapeutic response, but they did not perform any SIJ injection using ultrasound.[5]

Table 2: Techniques used for needle placement and confimation of that.

	Intra-articular Doppler Flow Signal	**Extra-Articular Doppler Flow Signal**	**Subsequent Fluoroscopic Confirmation of Needle Placement**
US Doppler Guided Needle placement	Detected in all cases	Not detected in any case	Intra-articular needle placement confirmed in all cases using radioopaque dye.

We thus strongly propose a well powered randomised controlled trial on this.

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Conflict of Interest: The authors report no conflicts of interest.

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SLOW SURGERY?

Editor,

Some of your readers will have heard of slow medicine. This concept was born in Italy in 2011 and aims to make medicine more measured, respectful and equitable.[1] Slow medicine asks health professionals to take their time to allow for a more holistic approach and a careful consideration of new methods and technologies. The movement has expanded, particularly in Europe.[2]

This has got me thinking about the surgical equivalent – slow surgery. For example, my Health Board in Wales, a home nation of the UK, has introduced an orthopaedic lifestyle programme for patients who may need a hip or knee replacement and have a Body Mass Index (BMI) of 35 and over. Patients take part in a 32-week programme of exercise classes at Leisure Centres and receive support from qualified professionals such as physiotherapists and dieticians. The aim is to induce weight loss in order to reduce the complications of surgery, as well as to decrease pain to the point, in some cases, where surgery is no longer needed.

The operational standards relating to referral to treatment times in Wales are that 95% of patients should be seen within 26 weeks, and no patients should wait longer than 36 weeks.[3] Trauma and Orthopaedics is the largest contributor to long waits, with 66% of total waits over 36 weeks in March 2018 being from this surgical specialty; this is followed by general surgery (9%). Therefore, could it be argued that we are practicing slow surgery by default anyway? I am sure that the picture will be similar in other home nations of the UK.

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PLASTIC AND RECONSTRUCTIVE SURGERY JOURNALS: FEASIBILITY OF ACCESS BY SURGEONS AND TRAINEES IN THE UNITED KINGDOM.

Editor,

The current surgical training system expects high levels of knowledge from trainees[1]. This is especially true in plastic and reconstructive surgery which is one of the most competitive specialties. Hence, surgeons in training must be familiar with the current literature in the field.

The resources available to achieve this goal reside mainly in medical journals. Access has been widely revolutionised by the novel electronic platforms.[2] However, limitations imposed by subscription fees are a significant obstacle.

We conducted an electronic survey to assess availability of medical journals, in UK units to surgeons in training and analyse the pattern to make recommendation for improvement. Ten journals were selected using the Scientific Journal Ranking (SJR) index, which is a numerical value used to compare journals according to the number of citations and popularity.[3] (Figure1). A questionnaire was distributed to librarians in the respective units followed by a telephone call to units that did not respond.

We collected responses from 52 units with 100% response rate. 45(86.5%) of them were in England, five (9.6%) in Scotland and one (1.9%) unit each in Wales and Northern Ireland.

The mean was 6.48 journals per unit whilst the overall mode was nine. One (1.9 %) unit had no access while only eight (15.3%) units subscribed to all journals.

The plastic surgery units in London and Scotland had higher access to the selected journals compared with other geographical areas in the UK. The highest number of journals accessible to trainees was in Scotland with an average of 9.2 followed by London with an average of 8.5.

The journal subscribed the most was Plastic and Reconstructive Surgery in 41(78.8%) of the units. The results show significant variation in both the number and quality of journals available to plastic surgery trainees in different units. In order to provide a level playing field, all trainees should have access to at least a core number of relevant journals.

Potential solutions include migrating to free access journals or providing shared access through a central point.

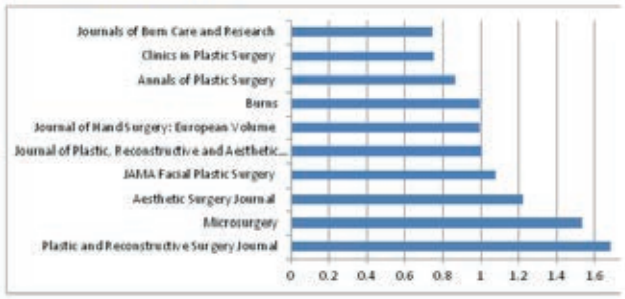
Open access journals, full or hybrid, provide free navigation without restrictions.[4] Funding can take many forms including article processing charges, institutional membership scheme, volunteer labour, sponsorship, institutional subsidies and finances from other sources.[5]

A growing trend is the conversion of subscription-based journals to hybrid open access journals where authors pay an extra charge to make their articles freely available to readers.[4] The development of open access journals may be helped by policy makers through centralised payment

scheme towards the article processing charge.[3] A good example of institutional support is the agreement between UK institutions and Springer to provide free access to more than 2000 subscription journals and an option for open access publication in hybrid journals.[6]

Another option is to provide a themed specialty specific subscription organised by professional bodies to replace the current arrangements that provide area-specific subscription organised by the relevant National Health Service trusts. Partnership between universities and NHS trusts can increase such access.

Chart 1: Plastic and reconstructive Journals included in the study and respective SJR indices 2016



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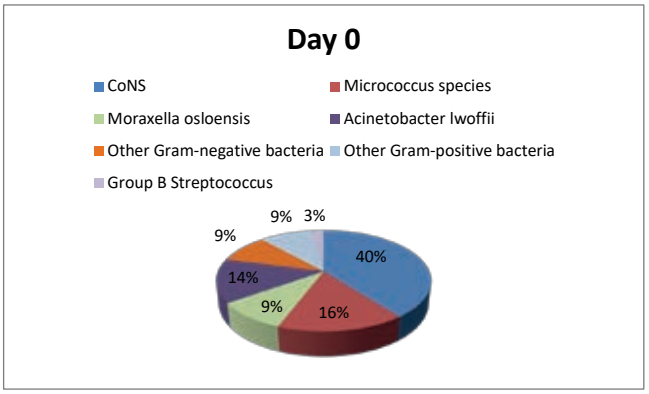
WHO CLEANS YOUR OCTOPUS? AN OBSERVATION OF CLEANING BEHAVIOURS AND BACTERIAL COLONISATION OF TOYS IN A NEONATAL UNIT

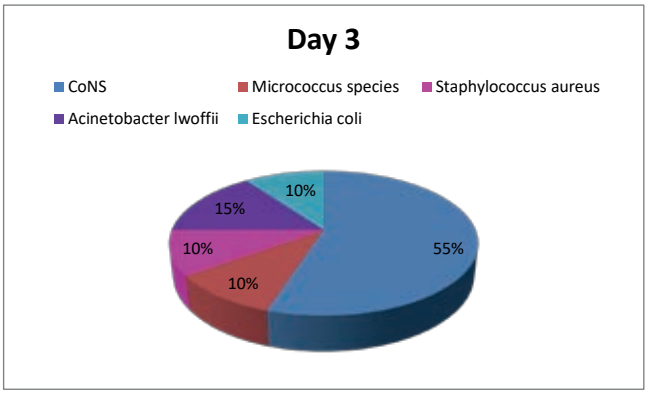
Editor,

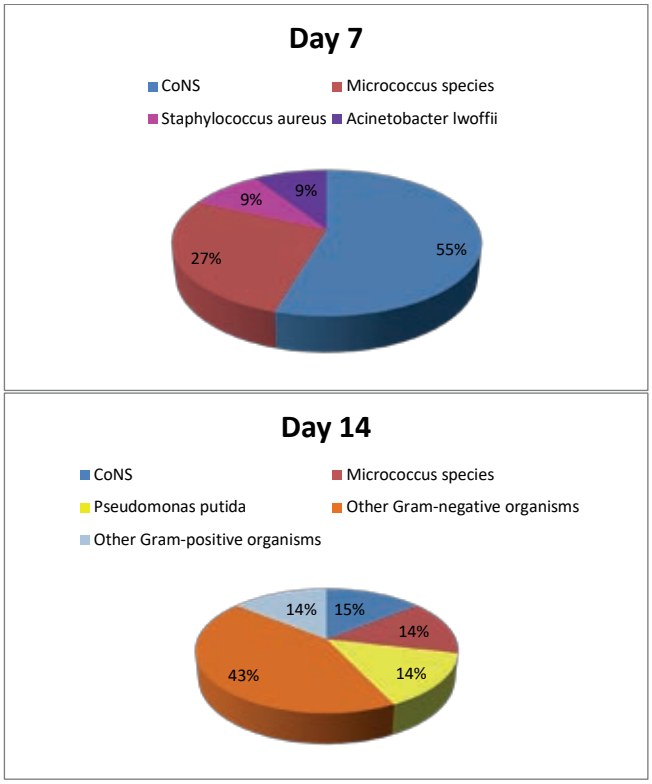
Toys remain a fixture of neonatal intensive care units despite being proven reservoirs of nosocomial microbes.[1] A survey of 13 neonatal units in the UK[2] identified variation in procurement and cleaning procedures and testing for fomites. Washing toys is proven to reduce the bacterial load of potential pathogens.[3] However there remains variation between units, regarding who has responsibility for cleaning toys, and what the interval between washes should be.

Toys within neonatal units have recently received a significant boon in press coverage. A movement originating from Aarhus, Denmark has seen knitted octopodes become an increasing fixture in neonatal units, with hospitals worldwide issuing public appeals for their procurement via social media. Despite emotive stories about the benefits of such woollen crustaceans there remains a paucity of published data proving they help regulate infant breathing, or reducing heart rate as is oft claimed anecdotally. Whilst the physiological benefits of toys in the neonatal setting are yet to be corroborated or refuted by robust testing, they are unlikely to disappear from units. Toys are often preferred by parents, they humanise an otherwise intensely clinical environment. Their presence allows parents to provide a touch of the child friendly environment, similar to that enjoyed on maternity and paediatric wards alike.

Figure 1. NICU Toy swabbing audit 2018







In a 13 bed neonatal unit, we tested all toys for colonization and observed for cleaning behaviours. No prompting was given to the parents to procure, remove or clean toys. Parents were free to supply, remove or take any toy for cleaning as they deemed fit, representing no change in established clinical practice. Toys that were removed for cleaning and returned by the parents were recorded.

During testing the operator washed their hands with the 7 step technique and donned sterile gloves before removing the toy, swabbing the entire surface with a moistened sterile swab and replacing the toy. The same procedure was repeated on day 3, day 7 and day 14 of the toy's sojourn in the neonatal unit.

The anonymised swabs were cultured on plates of MacConkey agar and Columbia blood agar. Results were not communicated from the lab until after the study period.

Figure 1 displays the prevalence of those micro-organisms cultured.

The positive culture rate of the toys was 72-82%. The predominant organisms in the first week were Coagulase-negative Staphylococcus (CoNS) and Micrococcus species, (skin commensals). The predominant Gram-negative organism was *Acinetobacter lwoffii* (an environmental organism). Group B Streptococcus was found on one toy, *Escherichia coli* on 2 toys. *Pseudomonas pudita* was cultured from a toy on day 14. *Pseudomonas* has gained notoriety in neonatal circles as recent outbreaks were associated with mortality in this population.[4]

Of the 28 toys enrolled into this study none were removed for cleaning and thereafter returned by the parents during the 3 month study period. A policy which depends on parents washing toys frequently under their own volition e.g. as suggested by octopusforapremie.com, was unsuccessful. After 7 days failure to do so seemingly increases the risk of colonisation by Gram-negative organisms including pseudomonas.

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