

# Letters

## I'M AN LGBT MEDICAL STUDENT, GET ME OUT OF HERE:

*Does sexuality contribute to Northern Ireland's brain drain? Findings from a survey of medical students at Queen's University Belfast*

Editor,

The loss of highly educated undergraduates and graduates from Northern Ireland (NI) to other countries for study and work, otherwise known as “Brain Drain”, is well recognised<sup>1</sup>. The intention to leave among NI students is significantly higher than comparable Northern European countries<sup>1,2</sup>. In particular, those within highly skilled professions such as medicine deem it “a necessity” for training purposes<sup>1</sup>. Existing literature suggests that contributing factors include geographical isolation, lack of opportunity and historically high mobility levels of young people from the island of Ireland<sup>1,2</sup>. This trend is particularly prevalent within Irish doctors in training, with 88% either contemplating or definitely migrating following graduation<sup>3</sup>.

A survey of 16-year-olds in NI found that non-heterosexuals had worse experiences in education, reported worse mental health and were more likely to say that they will leave NI with no intention to return<sup>4</sup>. In addition, this study found that ‘brain drain’ did not exist in a significant way in any group other than those with same-sex attraction<sup>4</sup>.

Our recent study at Queen's University Belfast (QUB) examining the experiences of lesbian, gay, bisexual and transgender (LGBT) medical students compared to their heterosexual peers suggests a novel factor contributing to the brain drain phenomenon. The study, an anonymous online survey disseminated to all medical students registered at QUB, had a total of 427 responses (30.5% response rate). Principal findings are detailed in Tables 1 and 2.

TABLE 1:

### Sexual Orientation

Sexual Orientation	%	Num.
Heterosexual	75.24	310
Gay/Lesbian	15.53	64
Bisexual	6.07	25
Other	0.73	3
Prefer not to say	0.49	2

It found that students from NI identifying as heterosexual are 1.5 times more likely to definitely plan to stay following graduation than non-heterosexuals. Non-heterosexual students from NI were over 5 times as likely to state definitely that they plan to leave NI following graduation. Moreover, this statistically significant difference (Chi-square test, p-value

< 0.00001) did not exist in students not originally from NI. When asked if students were aware of peers applying outside of NI because of their sexual orientation, almost 20% responded ‘yes’, with the number rising to 38% among non-heterosexuals.

TABLE 2:

### Planning to stay in Northern Ireland

Do you plan to stay in NI for further Foundation Training?		
From NI		
	Heterosexual	Non-heterosexual
Yes	59.90 (127)	39.39 (26)
No	4.72 (10)	25.76 (17)
Unsure	12.26 (26)	16.67 (11)
Skipped	23.11 (49)	18.18 (12)
Not from NI		
	Heterosexual	Non-heterosexual
Yes	19.79 (19)	18.75 (6)
No	30.21 (29)	31.25 (10)
Unsure	28.13 (27)	43.75 (14)
Skipped	21.88 (21)	6.25 (2)

So why are native non-heterosexuals more likely to plan to leave than non-heterosexuals from other countries? Comments from the survey included: “Northern Ireland is a very difficult place to find a partner in due to the political climate and lack of LGBT visibility”.

While anti-discrimination legislation was harmonised in England, Scotland and Wales under the British Equality Act 2010, legislation in NI remains discordant. A key difference relates to same sex marriage: protection is granted under the Equality Act 2010, but under current NI legislation it is illegal as defined in Section 75 of the Northern Ireland Act 1998. This is particularly poignant for QUB's medical school, wherein 70% of its students are from NI originally and 22% of respondents identified as non-heterosexual.

The issue of LGBTQ+ teaching was also raised by the General Medical Council (GMC) during their most recent visit to QUB in April 2017. In their report they noted that a significant number of students felt that they did not have a good understanding of LGBTQ+ medical issues. This report expressed “concern that subjects such as LGBTQ+ were given very minimal time within the curriculum”<sup>5</sup>.

These findings point towards the critical need for strategies to improve the non-heterosexual medical student experience and working environment, in order to prevent further and potentially irreversible loss of talented young doctors to other parts of the UK and beyond.



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#### PNEUMOBILIA VERSUS PORTAL VENOUS GAS IN BLUNT ABDOMINAL TRAUMA

Editor,

Hepatic portal venous gas (HPVG) and pneumobilia secondary to blunt abdominal trauma are rare CT findings. Appearances are similar and can lead to diagnostic confusion. HPVG, was first described by Wolfe and Evans in 1955<sup>1</sup> in relation to non-reversible intra-abdominal pathology in post mortem infants. Other causes have subsequently been described, but it is a rare finding in blunt abdominal trauma<sup>2</sup>. Pneumobilia has been reported in the context of emphysematous cholecystitis, passage of a biliary stone and endoscopic retrograde cholangiopancreatography (ERCP) but rarely in trauma.<sup>3</sup>

The following case supports the postulate that neither pathology is an absolute indication for exploratory laparotomy in an otherwise stable patient.

#### CASE REPORT

A 61-year-old white male was transferred 25 miles from the scene of a high-speed road traffic accident to the Royal Victoria Hospital. He was the driver of a car involved in a head on collision. He was restrained by his seatbelt and entrapped for 45 minutes due to driver compartment intrusion. Type II diabetes was his only significant past medical history.

He arrived in the resuscitation department 88 minutes after impact. He had been immobilised at the scene. Primary survey revealed haemodynamic stability and a GCS of 15/15. He was vomiting copious amounts of clear fluid with associated severe generalised abdominal, right-sided

chest and lower back pain. He had both a seatbelt sign and extensive bruising across his right lateral chest and back. Bloods including amylase were unremarkable. A full-body Trauma CT scan was conducted. The initial report identified significant global injuries including; a mid-shaft fracture of the right clavicle, multiple right-sided rib fractures, an unstable two column fracture of L5 vertebral body, traumatic liver laceration with associated pneumobilia segment 4A (figure 1), right posterior transverse abdominus avulsion, extensive thickening of the small bowel, flattening of the IVC and hyperenhancing adrenals suggesting hypovolaemia and shock. No mesenteric haematoma, free fluid or pneumoperitoneum was present.

On surgical reassessment the patient remained generally tender despite analgesia however haemodynamically was stable with no peritonitis. The decision was made not to proceed to immediate laparotomy. The patient was transferred to the High Dependence Unit for monitoring. Intubation was not required.



Fig 1. Gas in liver initially described as pneumobilia reported on review of images as portal venous gas, given peripheral distribution away from the main biliary tree.

The following day radiology review suggested the gas within the liver was in the portal venous system (HPVG), likely related to acute gastric dilatation as gas was also seen within the stomach wall dependently in the left upper quadrant (gastric pneumatosis) (figure 2), with small foci of gas in the adjacent gastric veins. As he remained stable we continued conservative management and the patient was successfully discharged home 21 days post admission.

Our case adds to the growing body of evidence that post-traumatic HPVG and pneumobilia are surrogate markers of significant trauma but neither sign in isolation should prompt immediate exploratory laparotomy in an otherwise stable patient.



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Written informed consent was obtained from the patient for publication of this case report and any accompanying images.

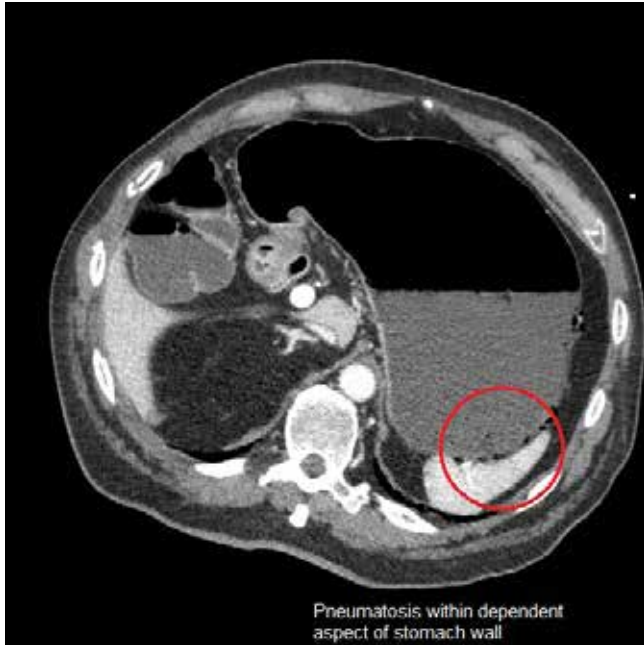


Fig 2. Incidental finding of gas within stomach wall

**Keywords:** pneumobilia, blunt trauma, portal venous gas

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#### JOHN FAGAN AND THE PNEUMATIC TYRE

Editor,

It cannot be said of many presidents of the Ulster Medical Society that they helped to change the world but if a claim by John Fagan is true then he was one. The pneumatic tyre was patented in 1845 by Robert William Thomson who, despite demonstrating its advantages on heavy horse-drawn vehicles, could not make it a commercial success. John Boyd Dunlop, a veterinary surgeon with a large practice in May Street, Belfast, filed his own patent in 1888 but acknowledged

that it was doubtful it was valid when, in 1890, he learnt of Thomson's prior art. The efficiency and comfort of the pneumatic cycle tyre and its success in cycle races lead to a huge demand for it especially after Charles Kingston Welch made it detachable.

Sir Arthur du Cros published a history of the pneumatic tyre in 1938<sup>[1]</sup> and was well placed to do so as he had been a director of the Pneumatic Tyre and Booth's Cycle Agency (his father's company with Dunlop on the Board) and of its successors, the first being the Dunlop Pneumatic Tyre Company. John Fagan (later Sir John Fagan), twice President of the Ulster Medical Society, had suggested that Dunlop's son, Johnnie, should take up cycling as it was an excellent form of exercise. The granite setts in the streets of Belfast made riding on solid tyres a jarring experience and Dunlop began to experiment with non-solid ones, initially filling them with water. Fagan had experience of air mattresses in his medical practice and du Cros states that Fagan frequently claimed to family and friends that he had suggested to Dunlop that he would be better to use air. Du Cros knew Dunlop very well from 1892 onwards and does not record any denial by him which perhaps lends credence to Fagan's claim. Thus Fagan would seem to have had a significant influence on the re-discovery of the pneumatic tyre on which modern road and air transport depends.

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#### PARANEOPLASTIC VITELLIFORM MACULOPATHY – ASSOCIATION WITH PRIMARY CANCERS

Editor,

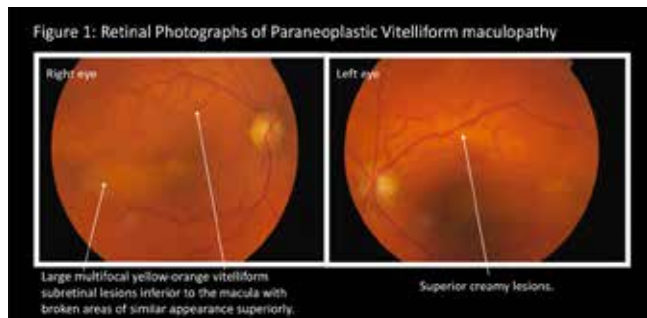
We wish to highlight an important potential ophthalmic paraneoplastic presentation, that should trigger further investigations to diagnose underlying malignancy.

Paraneoplastic disorders are conditions related to systemic malignancy, but the effects occur at a site remote from the original tumour or metastases.<sup>1</sup> It is estimated that paraneoplastic syndromes affecting the nervous or visual systems occur in about 0.01% of patients with cancer<sup>2</sup>. A systematic review in 2013 by Rahimy and Saraf listed the 23 cases of paraneoplastic vitelliform maculopathy (PVM) reported in the literature at that time. Most of the cases described were associated with cutaneous or choroidal melanoma and only rarely with carcinoma. All the cases in the review were either associated with metastatic disease at the time of presentation to ophthalmology or metastases were discovered within the following months<sup>3</sup>. The average age of onset was 59 years, with equal sex distribution<sup>3</sup>.



We present two cases of PVM; one associated with underlying cutaneous melanoma and one with primary breast carcinoma.

The first case was a 68-year-old lady (Figure 1) who presented with a one-year history of gradually decreasing vision bilaterally. She had a background of grade III ductal breast carcinoma, diagnosed five years previously. This was treated with mastectomy, chemotherapy and radiotherapy. At presentation her vision was RE 6/12, LE 6/15.



The second case was a 48-year-old lady who presented with bilateral visual distortion and gradually increasing blurred vision over 1 year. She had a medical history of malignant melanoma diagnosed 4 years before and treated with surgical resection and chemotherapy. At presentation to the ophthalmic team her vision was 6/6 right eye, 6/12 left eye. On retinal examination both cases revealed multifocal yellow-orange vitelliform lesions.

Prompt recognition of the clinical appearance of PVM can facilitate early investigation of underlying malignancy and metastases and it must be remembered that PVM may be the presentation of a distant primary malignancy. In the first case described here, there is currently no evidence of underlying metastases; this patient remains under close monitoring. Unfortunately, there is evidence that PVM is a poor prognostic indicator, with most patients having metastatic disease diagnosed shortly after presentation and succumbing to this from months to four years after presentation with PVM<sup>3</sup>.

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#### THE CHALLENGE OF ACHIEVING ADEQUATE ORAL IMMUNOSUPPRESSION IN A RENAL TRANSPLANT RECIPIENT WHO DEVELOPS SHORT BOWEL SYNDROME (SBS)

Editor,

A 39-year-old male with a renal transplant was admitted to

hospital with abdominal pain and vomiting. A computed tomography (CT) scan of abdomen showed ischaemic large bowel. He proceeded to a laparotomy with ileocaecal resection and right hemicolectomy. 2 days later he had worsening abdominal pain and a repeat CT abdomen demonstrated ischaemic small bowel. He had a further laparotomy, small bowel resection and end ileostomy, leaving only 1 metre of small bowel distal to the duodenal-jejunal flexure. 12 days later there was recurrence of small bowel ischaemia and a further 20cm of distal ileum was removed, leaving only 80cm of small bowel. Initial post-operative immunosuppression was established with intravenous (IV) hydrocortisone and IV cellcept, with no impairment in graft function.

The clinical challenge was how to achieve adequate oral immunosuppression in a patient with only 80cm of small bowel, presuming drug absorption from the gastrointestinal tract is significantly reduced.

Animal studies demonstrate tacrolimus absorption is predominantly in the upper part of the small intestine<sup>1</sup> and the colon<sup>2</sup>. On review of the literature there are multiple cases which describe the use of tacrolimus in SBS, in both kidney<sup>3</sup> and other solid organ transplants<sup>4,5</sup>. Interestingly, adequate tacrolimus levels can be achieved in the presence of a jejunostomy<sup>4</sup> and even in complete absence of small bowel<sup>5</sup>.

We stopped cellcept, commenced oral tacrolimus (Prograf) and converted IV hydrocortisone to oral prednisolone. Tacrolimus absorption was monitored with blood trough levels (target trough 5-10 µg/L). The patient was initially commenced on Prograf 5mg BD (0.15mg/kg). The first trough level was 12µg/L. After a period of elevated levels the dose was reduced to a maintenance dose of 1.5mg BD and this remained stable for many months

7 months later he underwent surgery to reverse the ileostomy. After reversal surgery, tacrolimus trough levels rose to 14-18 µg/L and Prograf dose was reduced to 1mg BD, maintaining stable trough levels 4-8 µg/L. There were no concerns regarding medication compliance with this patient. It is noteworthy that with ileostomy reversal, trough levels rose significantly. This supports observations in animal studies of further tacrolimus absorption in the colon<sup>2</sup>.

This case reminds us of the challenge of attaining adequate oral immunosuppression in renal transplant recipients who develop SBS. Tacrolimus can be used in this situation. Trough levels should be monitored and the dose adjusted in line with the surgery performed.

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### A CALCANEUS FRACTURE WITH INTERPOSED FLEXOR HALLUCIS LONGUS TENDON; A SURGICAL TIP TO AID TENDON REDUCTION

Editor,

Controversy still exists in the treatment of Os Calcis fractures. However, if surgical fixation is indicated the extended lateral approach is commonly used but an incarcerated flexor hallucis longus (FHL) tendon can block reduction of medial fracture fragments. We describe a simple, novel technique to aid reduction and help prevent FHL tendon interposition.

#### INTRODUCTION:

Os Calcis fractures typically occur in young, working-age adults after a fall from height<sup>1</sup>. They make up 1-2% of all fractures<sup>2</sup>. These injuries are often associated with extended recovery periods and can result in long-term morbidity including residual pain and loss of function.<sup>3</sup> Controversy still exists with regards to operative vs conservative management for these complex fractures.<sup>1,4,5</sup> A recent large, pragmatic, randomised controlled trial concluded that operative treatment compared with non-operative care showed no symptomatic or functional advantage after two years in patients with displaced intra-articular fractures.<sup>2</sup> However, many foot and ankle surgeons believe that with careful patient selection open reduction internal fixation (ORIF) of these fractures can restore mechanical alignment and restore subtalar articular congruity. In particular, fractures with incarcerated tendons are considered to be an indication for surgical treatment. The extended lateral approach is commonly used for ORIF but an incarcerated FHL tendon can block reduction of medial fracture fragments. We describe a simple and novel technique to aid reduction and help prevent FHL tendon interposition.

#### PRESENTATION

A 25 year old male was admitted with a displaced intra-articular calcaneal fracture following a fall from height. (Fig. 1) An incarcerated FHL tendon was suspected on the CT scan preoperatively. ORIF using a contoured locking plate was carried out through a standard extended lateral incision. Intraoperatively it was noted the fracture was difficult to reduce and the FHL tendon interposition was confirmed, from the lateral side, as the cause. To extricate the tendon from the fracture a small medial skin incision was made (approx. 3-4



Fig 1. Injury Radiograph, showing a communicated os calcis fracture (approx. 3-4 millimetres) and a MacDonald's dissector was introduced through the incision and used to manipulate the FHL tendon. See Fig. 2 for pre insertion of the MacDonald and Fig. 3 for the reduced tendon. As a result of this simple technique the fracture was easily reduced with no significant intraoperative delay or operative morbidity.

#### FOLLOW-UP

At a 3 month review the patient was pain free with reduced subtalar movement. Radiographs were satisfactory. At this stage he was allowed to wean out of his aircast boot and into normal footwear.

At a review 8 months post-surgery making a very good steady progress. Alignment is maintained and function is improving. There is no subtalar movement, however this was expected given the fracture pattern.

#### CONCLUSION

The MacDonald's dissector is a versatile surgical instrument. For this case if open reduction of the FHL tendon was considered there would have been an extensive lateral

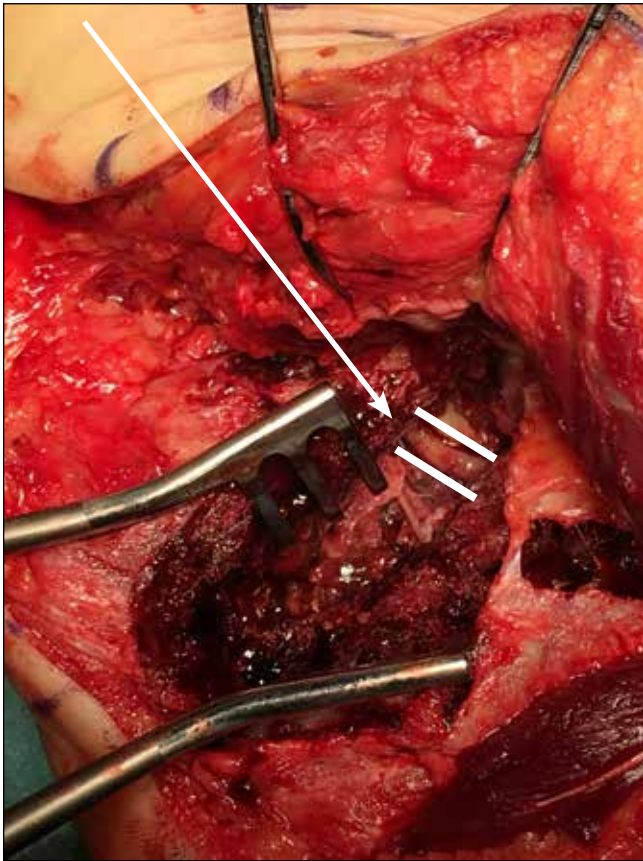


Fig 2. Interposed FHL tendon causing difficulty in fracture reduction

wound (for fracture fixation) and a significant medial wound for open tendon reduction. We have shown that a small percutaneous incision can be utilised to great affect with no additional operative morbidity.

We would advocate the use of this method for those who encounter this or similar surgical dilemmas.

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**Key words:** Os Calcis; Calcaneus; Fracture; Trauma; Flexor hallucis longus; FHL; MacDonald Dissector

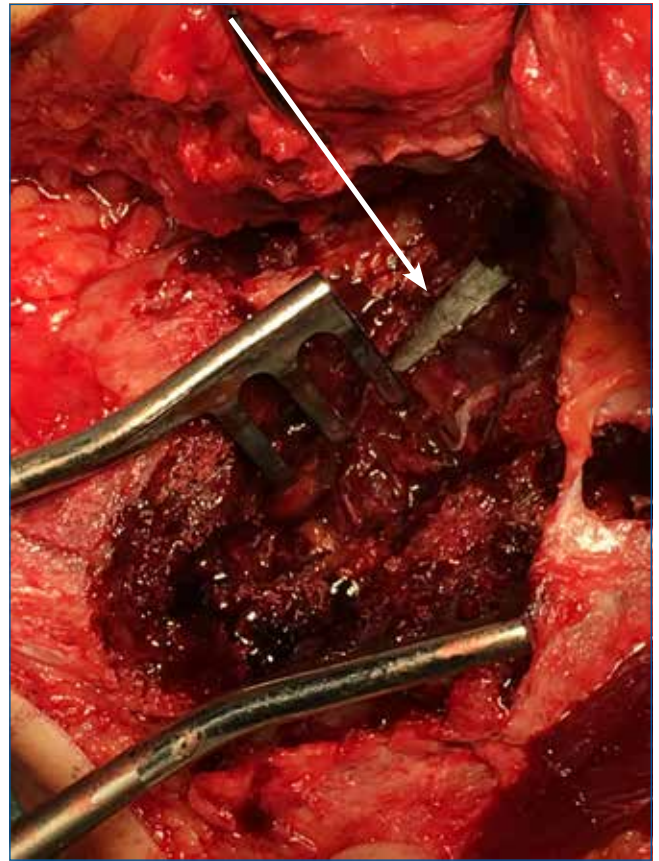


Fig 3. FHL now reduced using a MacDonald's Dissector with a minimally invasive approach

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