Letters

CHRONIC RING EROSION OF A FINGER

Editor,

Ring erosion of a digit is a rare injury that develops insidiously over many months or years.[1]The risk factors include psychiatric illness, poor social support and self-neglect.[1]The majority of patients deny direct trauma as a cause. We present a case of ring erosion of a digit with significant bone destruction.

A 59-year-old man was admitted for investigation of sepsis, following a fall. His comorbidities included obesity, recurrent lower leg cellulitis and restricted mobility. He had no psychiatric illness or known substance abuse. On admission, he was unkempt, pyrexial and tachycardic. The finding of an embedded ring on his right middle finger warranted plastic surgery review due to concerns that it could be the source of sepsis. On further questioning, the ring had been present for over 3 years and removal had been recommended. However, due to fear that it would result in finger amputation, the patient declined treatment.

Fig 1: Photograph showing dorsum of right hand with the ring embedded in the middle finger.

The finger was swollen proximally without significant erythema or discharge. It was well perfused and had a reduced range of movement and stiffness. The ring freely rotated in the bony tract which had formed over the years. Radiographic examination of the affected finger showed significant bone erosion of more than 50 % of the proximal phalanx (Figure 1,2)

The external part of the ring was cut with a ring cutter and the internal part was then easily removed by rotating it out through the formed tract.

DISCUSSION

Ring erosion of a digit involves a combination of repetitive trauma over a long period of time and predisposing factors. Initially, oedema and skin hypertrophy develop distal to the ring, subsequently, an epithelial bridge forms over the ring on the palmar surface, leaving the dorsal surface intact.[1]The clinical picture at presentation is usually either chronic or acute-on-chronic with superadded infection and neurovascular compromise.

Fig 2: Lateral radiographs of the right hand showing erosion of the proximal phalanx of the right middle finger before and after ring removal

To our knowledge, there is no case of digital amputation in the literature as a consequence of ring embedment. This could be explained by the fact that the involved digits, develop collateral circulation around the rings.[2,3]

In one review of the literature in 2002, Leung reported 11 cases with a similar presentation. Over 50% of patients had a mental illness and 72% were female between the ages of 7-73 years. Another author reported multiple rings removed from the same digit without the need for amputation.[2]

The management entails removal of the ring and wound care.[1] It may be possible to remove the ring with a ring cutter as a minor procedure, especially when the ring is freely mobile within the tissue plane formed.[1,4] A foreign body granuloma

may develop if a saw is used for ring removal as small ring fragments can remain in the tissue.[5] In more complicated cases, a hand surgeon should be consulted for consideration of removal in a controlled theatre environment.[1,3] In advanced cases, exploration and reconstruction of the defect may be required.[1,3]

The learning point is that early intervention is the key to preventing the associated morbidity caused by chronic destruction and loss of function.[3]

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OUTCOME OF SUPRAVENTRICULAR TACHYCARDIA IN INFANCY AFTER 4-YEAR FOLLOW-UP

Editor

Supraventricular tachycardia (SVT) is the most common arrhythmia in children, with the majority of SVT episodes occurring in a structurally normal heart.[1]

Although there is a broad spectrum of research on method of management and short-term outcomes of SVT prophylaxis[2-3], there is little evidence on the long-term outcome of patients presenting with SVT. In fact, we were only able to locate one study of 15 patients.[4]

METHODS

The 'HeartSuite' database from the Royal Belfast Hospital for Sick Children (RBHSC) included 55 patients who were diagnosed and admitted into RBHSC or referred to out-patients' clinics across Northern Ireland.

Data were collected for children presenting with the first episode for infants under 1 year of age between 2006 and 2011 allowing at least 4 years' follow-up.

RESULTS

The major finding was that 48/55 patients (87.3%) after review were discharged or able to live without medication. Of the 55 patients surveyed, 36 (65.5%) were discharged and 12 (21.8%) were still being followed up but on no medication. Only 6 (10.9%) were still on medication. There was one intervention for catheter ablation of the accessory pathway. There was no mortality.

DISCUSSION

The study suggests that a large number of patients presenting with the first episode in the first year were discharged after four years.

One retrospective review[4] on the outcome for AVNRT (atrioventricular nodal re-entry tachycardia), a common form of SVT, in 15 patients also showed no mortality after 40+ months' follow-up. 9/14 asymptomatic subjects (64.3%) were no longer on medication in their study which is significantly lower than our findings (87.3%) and 5 (35.7%) were still on medication after 21 months' follow-up – higher than our figure of 10.9%. 2/15 in the study underwent radiofrequency ablation (13.3%), also higher than the 1.8% intervention rate we found. The small number of patients followed up in both studies may have contributed to these discrepancies. This study was also specific to patients diagnosed with AVNRT and it was published almost two decades ago.

Our study was on a small scale but specific to the population of Northern Ireland. The strength of this study is that there is at least a four-year follow-up for each subject, enabling us to provide information for the long-term outcome.

CONCLUSION

This study provides detailed information on SVT outcomes in Northern Ireland. It provides a larger sample of patients than previously reported for over a similar length of time. This study may give doctors a clearer plan for paediatric SVT patients in relation to prognosis and duration of review.

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CAUGHT RED HANDED- CONGO STAINING IN THE OROPHARYNX

Editor,

A 74-year-old retired mechanic and never-smoker presented with a two-month history of hoarseness and weight loss. On examination he was found to have a large right-sided oropharyngeal mass extending across the soft palate with an associated ipsilateral neck gland.

Contrast enhanced computed tomography (CT) showed a 4x3x6cm mass extending from the hard palate to the superior border of the hyoid bone with no infiltration. It was contiguous, infiltrated the soft palate and bilateral level 2 lymphadenopathy was noted.

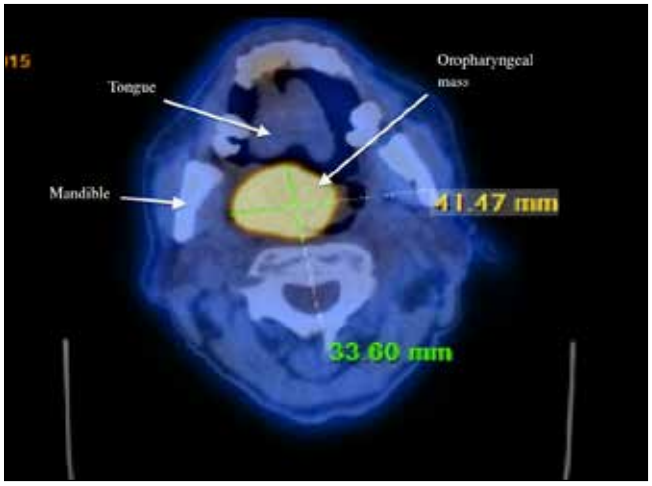

Fig 1: Axial PET CT image of mass in the oropharynx

Fine needle aspiration of the neck node showed abundant amorphous material which was representative of amyloid on Congo red stain and the washings showed polyclonal population on light chain stain- characteristic of amyloidosis. PET CT confirmed uptake in the oropharynx but showed nil else in keeping with systemic amyloidosis. (Fig 1)

This patient was managed jointly by ENT and the haematologists who commenced a short course of steroids with good symptomatic effect and by the otolaryngologists who performed carbon dioxide laser resection. A pre-operative tracheostomy under local anaesthetic and embolisation of the external carotid artery was performed as substantial bleeding was expected due to the rich blood supply and dense protein matrix in amyloid lesions, which prevents constriction of the blood vessels.

To date there has been no re-occurrence of the disease though some is expected, as full excision was not possible due to the location of the deposit. This patient remains under regular follow by the otolaryngologists, the haematologists and the National Amyloid center.

DIAGNOSIS

The diagnosis of amyloidosis is made by a combination of clinical symptoms and tissue biopsy to establish a definitive diagnosis. Bennhold introduced the Congo red stain in 1922 and showed the characteristic red staining of amyloid in normal light. (Fig 2) Apple-green birefringence with polarised light microscopy, however, is the gold standard for diagnosis. (Fig 3)[1]

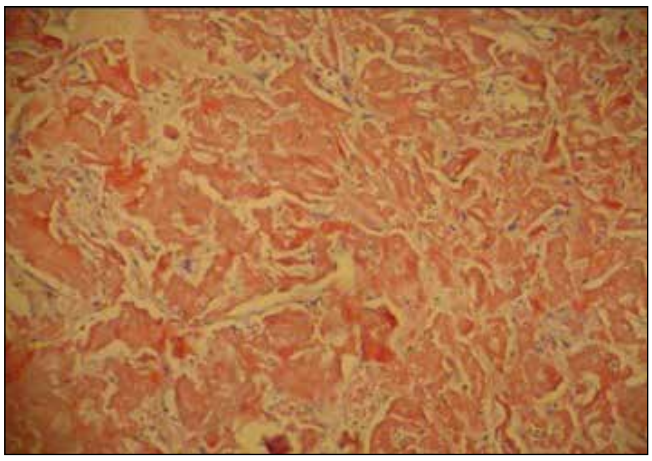

Fig 2: Slide with Congo red stain showing presence of amyloid

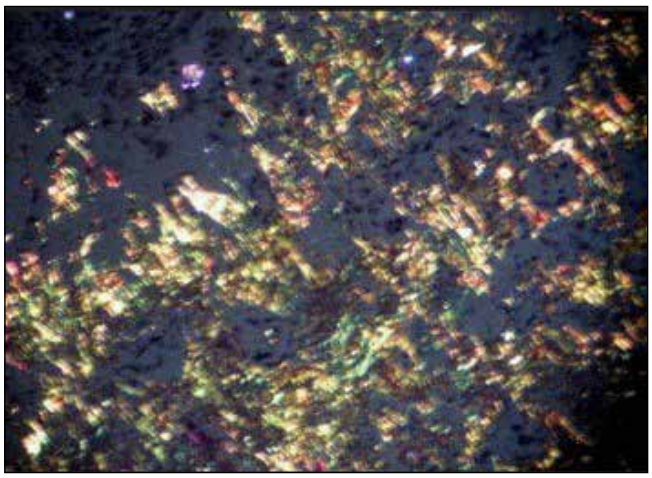

Fig 3: Apple green birefringence in polarised light-green colour demonstrates presence of amyloid

IMAGING

Computed Tomography (CT) and Magnetic resonance imaging (MRI) are useful to assist in surgical approach but are non-specific for amyloidosis. The presence of giant cells in localised amyloidosis enables (18) F-fluorodeoxyglucose (FDG) positron emission tomography/ computed tomography (PET/CT) to be used in the differentiation between systemic and localised disease. Scintigraphy following administration of radio-labelled serum amyloid P component (SAP) is a specific imaging technique which enables quantification of amyloid deposits. This investigation is only available in a few centres in the United Kingdom including the National Amyloidosis Centre.

DISCUSSION

Amyloidosis is a heterogeneous group of diseases that can present with diverse symptoms according to the predominant site(s) of protein deposition. Although a rare disease, is not

uncommon, with head and neck involvement in 19% of cases.[2] It is important differential diagnosis for oropharyngeal masses as the management and prognosis varies significantly from malignant disease.

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FOUNDATION DOCTORS' AUDITS: EFFECTIVE OR NOT?

Editor,

The UK Foundation Programme (FP) curriculum recommends that Foundation doctors (FD) develop experience in 'managing, analysing and presenting at least one quality improvement project and using the results to improve patient care'[1]. While the Maltese FP follows the UKFP recommendations, little emphasis is placed on completion of the audit cycle. The authors devised a questionnaire to assess the proportion of audits performed by FDs at Mater Dei Hospital (MDH) that completed the audit cycle, implementing changes in clinical practice.

METHODS

All audits registered on the Maltese FP audit register between January 2012 and August 2015 were included in the study: a total of 110 projects. The questionnaire was forwarded to the main author of each registered project by electronic mail, and responses collected over 6 months.

RESULTS

57 questionnaires were completed (52%). Most FD embarked on an audit so as to influence practice (79%) or improve the curriculum vitae (72%). 66.6% of respondents felt satisfied with the outcome of their project, while 71% felt supported in performing the audit. 77% of respondents felt encouraged to present their findings. Only 5.2% of audits reached the final, re-audit stage of the audit cycle. The most common reasons for failing to complete the audit loop were time limitations (46.9%), administrative difficulties (25%) and a move to a different department (50%). Of the 94.8% of responders who failed to complete the audit cycle, only 8.9% handed over their work to a colleague to complete.

DISCUSSION

Audits done by FD in Malta were rarely completed, with only 5.2% of the registered audits reaching the re-audit stage. This compares with 24% in a similar study in London[2]. 21% of junior doctors from Leeds perceived their audit projects to have a negative effect on the department[3] the degree of support from audit staff, and the perceived value of the resulting audits. This contrasts with our data showing a relatively high rate of satisfaction with the outcome of the audits performed, regardless of the stage of the audit cycle that was reached. This could indicate a poor appreciation of the potential for audit to influence practice. Also sobering is the fact that of those failing to complete the audit cycle, 91% did not plan to handover their results to a colleague to complete the cycle, and almost 50% had no plans to complete the audit. In these cases, it appears that potentially influential data has gone to waste.

The authors propose a handover system for FD to pass on their collected data for a colleague to act upon. This could avoid useful and hard-earned data from going to waste, and lead to improvements in practice. Encouraging multiple FD to work as a team on a single project can also help them overcome time limitations[4]. FD need to be made aware of the value of a completed audit: part of the responsibility for this falls on Educational Supervisors within the FP. Helping junior doctors to contribute by implementing change will motivate them and encourage them to undertake further audit projects in the future.

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CENTRIFUGATION IN GP PRACTICES - CAN IT IMPROVE DIAGNOSTIC EFFICIENCY?

Editor

Potassium (K) is one of the most frequently tested analytes in the biochemistry laboratory. Because of its critical role in both cellular and electrical function it is vital that hypo and hyperkalaemia are promptly communicated to clinicians. A delay in sample centrifugation is a common cause of pseudohyperkalaemia. The follow up of pseudohyperkalaemia consumes valuable health care resources and can result in patient care delays.

The purpose of this trial of sample centrifugation at source was to verify the positive impact on the quality of potassium results (ie the number of samples requiring follow-up) reported within the literature[1] and measure user satisfaction

TABLE 1:

Proportion of results per concentration category

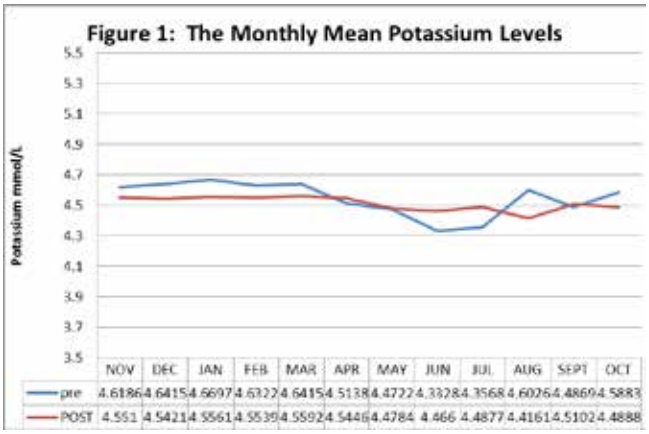
	Pre implementation		Post implementation	
	Number of samples	% of total sample number	Number of samples	% of total sample number
Dashed out	434	10.68	32	0.77
<3.5	38	0.93	39	0.94
Normal range	3365	82.78	3912	94.54
>5.3-6	210	5.17	140	3.38
>6	18	0.44	15	0.36
TOTAL	4065		4138	

A Heraeus Labofuge 300 centrifuge fitted with an 8 swing bucket rotor was installed in the Dromore GP surgery treatment room and safety checked by the supplier. To ensure the safety of patients and staff a comprehensive training program was delivered by the laboratory Biomedical scientist.

The pilot officially started in November 2014. To minimise the chances of erroneous potassium results due to samples being mistakenly re-centrifuged[2], the practice placed all centrifuged samples in a special labelled bag. Potassium results for the Dromore practice during the pilot period and retrospective data from November 2013 to October 2014 were extracted from the Laboratory information system and analysed by Microsoft EXCEL. User satisfaction was accessed by a post pilot questionnaire.

The total numbers of potassium requests during the pre-implementation and implementation periods, presented in Table 1, were similar. There was a 2% increase in requests. This increase in activity is consistent with the long term activity trend for biochemistry analysis.

Centrifugation at source improves the quality of Potassium result in 2 ways. Firstly, as evident in figure 1 and previously reported by Turner et al (2012) it reduces seasonal variation. Secondly as we see in table 1 it increases the proportion of results within the normal range thus reducing the need to follow up abnormal results. The proportion of results in the <3.5 mmol/L category was unaltered therefore the improvement is primarily due to a reduction in the elevated and dashed out categories. It is noteworthy that only in the post implementation period were values exceeding 7 reported. In these 2 patients previous results had been dashed out due to delayed separation.



Feedback from Dromore treatment room staff was extremely positive. The additional time spent centrifuging samples was offset by the flexibility of collecting samples at any time of the day rather than organising collections to coincide with the delivery vans. The footprint of the centrifuge did not significantly impact on the space within the treatment room and the noise level was not intrusive. General practitioners indicated a reduction in the time taken to review lab results and a reduction in the risk posed by alert fatigue. The Practice would encourage other practices to consider installing a centrifuge.

Centrifugation at source or an alternative such as phlebotomy centres must be an integrated component of the Pathology modernisation strategy[4].

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