TORSION OF THE VERMIFORM APPENDIX – A REVIEW OF THE LITERATURE

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ABSTRACT

Introduction: A case of torsion of the vermiform appendix was encountered by the authors. This is a rare variant of a very common clinical entity. This literature review outlines reported cases from a historical perspective, discusses aetiology and clinical findings to inform future management of this very rare disease.

Methods: The ‘NHS Evidence’ tool was used to search multiple databases. The terms ‘torsion’ and ‘vermiform appendix’ were used. This was followed by hand searching of references. 35 papers were examined.

Findings: Torsion of the vermiform appendix has multiple aetiologies that seem related to the bulk of the appendix. The cause of this unusual finding has little effect on initial management and the surgeon should proceed confidently with operative excision.

INTRODUCTION

Appendicitis is an extremely common presentation to general surgery in both adult and paediatric practice. Torsion of the vermiform appendix, which is currently indistinguishable clinically from appendicitis, is very rare indeed.[1]

Following the discovery of a case of appendicular torsion in a 12 year old boy due to a faecolith, a review of the literature was undertaken to compare the case and examine the evidence for its existence and management.[2] The results of this are presented.

METHODS

Using the ‘NHS Evidence’ tool on the library.nhs.uk website, several databases were searched. These included AMED, BNI, CINAHL, EMBASE and MEDLINE. The terms ‘torsion’ and ‘vermiform appendix’ were used revealing 36 results. Removal of duplication left 27 unique results. Abstract

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reading left 19 relevant articles. Two were unavailable in English. Hand searching of references yielded another 17 articles (and three more unavailable). One case had been published by the authors. A total of 35 articles were gone through.

RESULTS

In 1918 Payne reported the first case of torsion of the appendix in an article in the British Journal of Surgery.[3] Two years later Beevors reported a similar case, this time in the Lancet.[4] A case associated with pregnancy was reported in the same journal in 1936.[5]

In 1939 Heatley published a case of mucocele of the appendix leading to torsion.[6] Another 10 years passed until Hughes published a case seemingly associated with infestation of schistosoma haematobium[7]. Reference papers by Manzella from 1945 and Lentin from 1946 were inaccessible.[8,9,10]

Cases due to mucocele were published by Dickson in 1953 and Chan in 1965.[11,12] The last case reported in the 1960s was by Killam who reported a case due to a mesoappendiceal lipoma.[13]

Legg reported another case due to mucocele in 1972 [1]. Two idiopathic cases were reported by Finch in the British Journal of Medical Practitioners in 1974 and also by Won and Waxman in JAMA in 1977[14,15]. The 1980s brought four articles in the English language journals and the 1990s seven articles, all case reports [16-26]. From 2000 to present another 12 articles were published, again all case reports [27-37]. One of these discussed technical details of sonographic diagnosis, and another the laparoscopic findings and management [32,34].

The age at presentation parallels that of acute appendicitis, affecting males and females of all ages. The youngest reported case was 50 days and the oldest 76 years old [20,27]. Most of the cases were in children aged 3-10 years and adults in their 30s and 40s.

In the main patients presented with acute abdominal pain or its paediatric representation, irritability.(20) One case however presented as an acutely painful scrotum.(17) There is little in the literature to suggest that torsion of the vermiform appendix may be responsible for chronic pain, although one case report commented on a history of intermittent right iliac fossa pain prior to the index admission [2]. Core body temperature in subjects ranged from apyrexial to severe pyrexia of 39.5°C, however all patients were tachycardic on presentation [20,23]. The majority of subjects were not vomiting, with the exception of two paediatric patients aged 6 and 9 years old [28,29].

Rotation of the appendix has been seen in both clockwise and anticlockwise directions, ranging from 120 degrees to 1080 degrees [8,20]. Descriptions of the appearance of the appendix varied from twisted with minimal inflammation to severely congested and gangrenous or necrotic [20,23,28,29,34].
Three cases reported faecolith as an aetiological factor, two in a child the third in a 73 year old adult [1,2,27]. Other aetiological factors include seven cases of mucocele, two mucinous cystadenomas, one bilharzia of the appendix and one mesoappendiceal lipoma. In addition, one case was associated with intussusception and one with an undescended caecum [7,13,11,12,25,26,31,32,36,37].

Two cases have been reported in pregnant women [25,38]. A case mimicking ovarian cancer, with raised serum carcinoembryonic antigen concentration and an oval shaped cystic mass measuring 9 cm in length on the right anterior side of the uterus on CT, has also been observed and reported [26].

All patients underwent emergency appendicectomy. Histopathological evaluation confirmed the above aetiological factors in the relevant cases. In those with unclear aetiology, descriptions in the literature include “the appendix was only minimally inflamed” through to “segmental hemorrhagic necrosis and oedema was observed” [28,29].

DISCUSSION

Torsion of the vermiform appendix is a rare cause of acute abdominal pain. We are unable to identify any association between the degree of rotation and aetiology or presentation in view of the relatively small sample size. All that can be inferred is that a rotation of 120 degrees is sufficient to compromise vascular supply in some patients. All of the aetiologies encountered in the review increase the bulk of the appendix.

The range of aetiological factors implicated and patients that may be affected is similar to that of acute appendicitis. The two conditions remain all but indistinguishable clinically, and therefore their management should be the same. As such, torsion of the vermiform appendix is an interesting case to encounter, and surgeons should proceed confidently with operative management.

REFERENCES

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