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## Torsion of an epiploic appendix mimicking acute appendicitis

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Disorders of the epiploic appendages are rare, usually affecting the middle age group.<sup>1,2</sup> They are rarely diagnosed preoperatively being commonly confused with diverticulitis of the sigmoid colon, and other causes of acute abdominal pain. Conservative treatment with antibiotics and pain relief is usually safe. We present a case of a young girl with acute epiploic appendagitis being diagnosed preoperatively as appendicitis, and we review the literature.

A 16-year-old girl presented to our Accident and Emergency Department with 2-day history of right iliac fossa pain, which she described as a continuous ache sometimes radiating to the back. She felt generally unwell, and her appetite was poor. There was no history of vomiting although, she was nauseated. Her bowels were regular and she denied any symptoms of urinary tract infection. Her history was not significant apart from the fact that she had irregular periods. On examination, she was comfortable at rest with a temperature of 36.7°C, a pulse of 94 beats/min, and a BP of 113/75. System examination revealed no abnormal findings, and examining her abdomen she was markedly tender in

the right iliac fossa with rebound tenderness and some guarding. The rest of the abdomen was soft with normal bowel sounds. Per rectum examination was normal. Laboratory investigations showed a normal Hb, a white blood cell count of 6.5 cells/mm, a normal differential count, and normal urea and electrolytes. The urine tested positive for blood (patient was menstruating), but was negative for leukocyte, proteins and nitrates. In view of the history and the signs on abdominal examination, she was diagnosed as having acute appendicitis, and was taken to the theater for an appendicectomy. At operation, there was some serosanguineous fluid in the right iliac fossa. The appendix looked normal, but there was a gangrenous appendix epiploica on the surface of the cecum. The patient underwent an appendicectomy with excision of the gangrenous necrotic fat on the cecum. Her postoperative course was uneventful, and she went home 24 hours after the operation. The histology revealed a congested hemorrhagic, and partly necrotic adipose tissue, consistent with the clinical diagnosis of strangulated appendix epiploica. The appendix showed no significant histological abnormality. Epiploic appendages are pedunculated, fatty structures around 2-5 cm in diameter scattered all over the colon, and covered with peritoneum. They are bigger in size and more prominent on the left side of the colon compared with the right side. Epiploic appendagitis affects the sigmoid colon more than the cecum and ascending colon.<sup>1</sup> Diseases of the epiploic appendages are difficult to diagnose clinically due to the lack of pathognomonic clinical features, but with the increasing use of CT scan for assessing cases of acute abdominal pain, their preoperative diagnosis is now more common. They affect the middle age group with a peak incidence at around the age of 40 years.<sup>1</sup> Necrosis of the epiploic appendages is commonly due to an ischemic event either secondary to torsion or spontaneous thrombosis,<sup>2</sup> but can also be due to a non vascular event. One can often confuse the condition with diverticulitis of the sigmoid colon, but it can mimic acute appendicitis when it affects the cecum. Patients usually present with a sudden onset of sharp localized pain either in the left or right iliac fossa with minimal gastrointestinal symptoms. The temperature and white blood cell count can be normal or slightly elevated. We can use both ultrasound and CT scan for reaching the diagnosis of epiploic appendagitis. The infarcted appendix has a characteristic sonographic appearance. It shows as a hyperechoic non compressible ovoid structure near the colonic wall. The use of color Doppler demonstrates the absence of blood flow in these lesions.<sup>3</sup> In addition to confirming the diagnosis in doubtful cases, CT scan is also useful in the follow up of patients treated conservatively.<sup>4</sup>

Vazquez-Frias et al,<sup>5</sup> used laparoscopy in diagnosing and successfully excising the infarcted appendix.

In conclusion, acute epiploic appendagitis is a rare condition that can cause a diagnostic dilemma in cases of acute abdominal pain. Conservative treatment with analgesia and antibiotics is usually safe, but in cases when we reach the diagnosis during operative exploration the treatment is ligation and excision of the necrotic tissue with seromuscular inversion.<sup>1</sup>

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## Public knowledge and attitudes towards passive smoking

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**T**he adverse effect of passive smoking on health and the classification of environmental tobacco smoke (ETS) as a carcinogen has been repeatedly documented in the medical literature. Results of many population surveys indicate that the public is knowledgeable of the definition of passive smoking, and are aware of its health hazards with a substantial increase in this knowledge.<sup>1</sup> The gain in public knowledge and the mounting evidence on the harmful effects resulting from the exposure to tobacco smoke has resulted in legislative actions for

protecting the public health in many countries.<sup>2</sup> Although, widespread public information on the harmful effects of passive smoking is essential for the success of tobacco control programs, it is not sufficient if not accompanied with strong negative attitudes towards involuntary smoking. Moreover, establishing nonsmoking as the norm and empowering nonsmokers particularly the young, to be more assertive in demanding their rights to a smoke free environment are vital elements in any smoking control program. Bahrain, similar to several other countries, acted to protect the public and reduce its exposure to ETS.<sup>3</sup> Bahrain's tobacco control efforts include restrictions on smoking in the work, and public places through legislation.<sup>4</sup> The aim of this study was to determine the knowledge and attitudes of the Bahraini public towards passive smoking as such information would suggest tobacco control policies and implementation strategies.

The sample population included 506 Bahraini adults (18-60 years) who had attended the 4 selected health centers during summer 2001. The selected health centers were all those that opened during mornings, evenings and weekends. The excluded health centers were those health centers that opened mornings only or opened mornings and evenings but closed on weekends. We included all attendants of these health centers who satisfied the selection criteria in the study. We used an anonymous self-administered questionnaire, and based the questionnaire on that developed by Kurtz et al,<sup>5</sup> modified, translated to Arabic and pilot tested. In addition to socio-demographic data, smoking status and exposure to passive smoking, the questionnaire included questions on knowledge of the adverse effects of ETS, attitude questions that assessed feelings and reactions towards ETS, and a section on preventive efforts, which included questions on measures taken when exposed to involuntary smoking. We used a 5-point Likert scale from strongly agree, agree, undecided, disagree, and strongly disagree. The data were entered and analyzed using SPSS version 11.0 for windows. The scale for the knowledge and attitude statements was grouped whereby; "strongly agree" and "agree" indicated "agreement" and "strongly disagree" and "disagree" indicated "disagreement". Education and occupation were both grouped into high, medium and low. "High" education included secondary and above, "middle", intermediate, and "low" read and write and primary. We classified high and low professionals as "high", skilled and semi skilled as "middle", and unskilled and unemployed as "low" occupations. Ever smoking was defined as smoking 100 cigarettes or the equivalent amount of tobacco in lifetime and current smoking as smoking any type of tobacco, daily or occasionally, at the time of the survey. Other type of tobacco included the