An unusual cause of haematuria

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Abstract We report an unusual cause of haematuria in a young male patient due to leech in urinary bladder. The patient presented with undiagnosed haematuria of 12 days duration. Sonography is a safe and noninvasive procedure for diagnosis. Most of the leeches are micturated out spontaneously.

Keywords Haematuria · Leech · Urinary bladder

Introduction

Human hirudiniasis caused by leeches occur rarely with unusual symptoms. The leech commonly infests the body surface of the host to suck blood and it has the habit of entering into the anatomical orifices such as the urethra, anus, vagina, nose and throat. A few studies have reported internal hirudiniasis found in nasal cavity, pharynx, the larynx and tonsils [1–3]. Very few reports have described a leech inside the urinary bladder. This reports describes a case of vesical hirudiniasis in a young male patient of 22 years who had severe undiagnosed haematuria of 12 days duration that started suddenly when he was defecating. We would like to describes the case report of this unusual parasitic attack.

Case report

A 22-year-old male farmer was referred from a peripheral district hospital with the complain of severe uncontrolled haematuria of 12 days duration. In the local hospital he was treated with Foley catheter drainage of the urinary bladder. The catheter was changed four times as it was blocked due to blood clot. The patient had to be transfused with two units of blood.

In our Surgery Department the patient said that he was perfectly healthy before this episode of haematuria. He never had any urinary symptoms. He was a farmer by profession and used to wade in paddy field and waist deep water. In the village he used to take bath in the pond. He noticed bleeding per urethra and obstruction to flow of urine during defecation.

On examination his pulse was 90/min and BP was 110/70 mmHg. He had pallor. On examination of the abdomen, urinary bladder was not distended and suprapubic tenderness

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was present. Other examinations were normal. The Foley catheter was in situ and was draining haematuric urine. He was admitted to the hospital and treated conservatively by saline infusion and antibiotics.

His haemoglobin level was 9 gm/dl, leucocyte count was $11 \times 10^9 / L$ with 65% neutrophils and 22% lymphocytes. Other reports of blood glucose, blood urea, serum creatinine levels, chest radiographs and ECG were normal. Sonography of urinary system was done on the following day. It showed a tubular, non shadowing structure with a highly echogenic wall and a less echogenic centre. The structure was 12 cm in length and 1.2 cm in diameter. The report was consistent with leech in urinary bladder. All other pelvic and abdominal sonographic findings were unremarkable.

On the same day the patient had severe pain in the suprapubic region and he himself removed the catheter. He went to the bathroom and tried to pass urine by force. He passed a dead leech of length 13 cm (Fig. 1). After this episode he started passing urine normally and haematuria subsided. We again repeated the sonography and it revealed no evidence of leech in the urinary bladder. After 3 days of observation the patient was discharged.

Discussion

The leech (*hirudinaria granulose*) is a blood sucking worm that belongs to the class Hirudinea of the phylum Annelida. Leeches are hermaphrodites, meaning they are organisms that have both female and male reproductive organs. Medicinal leeches have been used for clinical blood letting for thousands of years. Leeches are widespread in marine water and are found in fresh water and on land in temperate and tropical regions. They are flattened and can swim or crawl by looping movements. The leeches are parasitic in humans and other animals. The body of leech is composed of 34 segments. Haemophagic leeches attach to their hosts by its posterior sucker. Then cup shaped anterior sucker is suitably placed on a soft site of host's skin. Anterior (oral) sucker is

Fig. 1 The leech after expulsion from the urinary bladder

formed from the first six segments of their body, which is used to connect to a host for feeding, and also release an anesthetic to prevent the host from feeling the leech. They use a combination of mucus and suction to stay attached and secrete an anti-clotting enzyme into the host's blood stream. It produces a triradiate wound and the blood coming out from the wound is sucked into the pharynx by alternate contraction and expansion of pharyngeal muscle. Due to an anticoagulant (hirudin) that leeches secrete, bites may bleed more than a normal wound after the leech is removed. In case of urinary bladder, hemostasis is further prevented due to steady urinary flow. The effect of the anticoagulant will wear off several hours after the leech is removed. Human hirudiniasis may cause serious complications such as epistaxis, airway obstruction, haemoptysis, vaginal bleeding and very rarely haematuria as reported in this case. The leech loses body water in an hypertonic milieu exterior and application of common salt on its body surface to dislodge it is an usual practice.

Sonography is a safe and non invasive procedure that permits the identification of any soft tissue foreign body in the urinary bladder. A short, tube like, non shadowing structure with a highly echogenic wall and a less echogenic center may indicate a worm in the urinary bladder [4]. The common causes of haematuria are calculus, tumour and foreign body in the bladder. Calculus is easily identified by the shadow it produces on USG. No bladder tumour has an appearance that simulates the well defined, tubular, constant diameter, intraluminal abnormality surrounded by fluids.

Most of the patients micturate out the dead leech spontaneously as in our case. The symptoms of pain, dysuria and haematuria resolves in a few days. Ghosh et al in his report of two cases, managed by infusing normal saline through the Foley catheter and clamping it for 3–4 hour and then releasing it. The leech was micturated out spontaneously after removal of catheter [5]. If this simple method fails then cystoscopic removal is worth trying. Some cases may require suprapubic bladder exploration for removal of leech and control of bleeding under direct vision [6].

It is difficult to answer whether a leech can be alive inside the urinary bladder. Most publications reveal extraction of a dead leech, although a living leech (sluggishly moving) was encountered after suprapubic extraction, 8 hours after its entry into the bladder [7].

Conclusion

Vesical hirudiniasis is rare, but it remains a possible cause of sudden haematuria. This needs to be considered in patients coming from rural area who did not have any history of previous urinary symptoms. Sonography is an effective imaging modality for the detection of leech in the urinary bladder. Most of the dead leeches are micturated out spontaneously. Some may need cystoscopic removal.

Conflict of interest The authors do not have any disclosable interest.

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