Endoscopic anisakis removal induced anterior cutaneous nerve entrapment syndrome

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DESCRIPTION

A 66-year-old man without significant medical history presented to our hospital for a routine check-up. He underwent oesophagogastroduodenoscopy (EGD) annually. He reported having eaten mackerel sushi 3 days before the check-up. Transnasal EGD showed anisakid nematodes, which were removed using standard biopsy forceps (figure 1A). The patient did not have any abdominal pain before or during EGD; however, he experienced sudden abdominal pain 15 min after the examination. The pain persisted and was aggravated by movements, walking and moving in bed. Abdominal enhanced CT scan showed no abnormal findings. The pain moved from the lower abdomen to the left side of the umbilicus, and a detailed physical examination revealed a 2×2 cm tenderness area off the lateral border of the rectus abdominis muscle (figure 1B). Carnett's sign was positive, and the pain exacerbated on slight pinching of the abdominal wall. Sonography revealed tenderness at 1.5 cm below, at the lateral rectus abdominis muscle border, with no abnormal findings, such as the presence of haematoma. Using sonography, a 1% xylocaine solution (5 mL) was injected into the adipose layer and the rectal muscle sheath at a depth of 1 cm (figure 1C), and the pain disappeared 15 min later. Anterior cutaneous nerve entrapment syndrome (ACNES) was diagnosed. The patient was discharged from the hospital the next day without having taken any sedative medication. He visited the hospital after 1 week, and at 3 months, we confirmed that there was no abdominal pain recurrence via a telephone call.

ACNES is a nerve ischaemia of the intercostal nerve branches of the thoracic spinal nerve. It occurs because of herniation of the connective adipose tissue surrounding the nerves in the rectus abdominis muscle or the pulling and pushing forces exerted on the same area.¹ Approximately 5.3% of the patients who undergo EGD can experience abdominal discomfort within 24 hours of the examination.² A patient with a gastric ulcer reportedly developed ACNES 3 days after EGD.³ Pneumoperitoneum during EGD causes abdominal wall elongation, which could cause ACNES. Previous studies have reported an association between anisakis and ACNES. However, anisakis causes abdominal pain and gastrointestinal disturbances.⁴ Similar to patients with gastric ulcer who develop ACNES after EGD,³ the abdominal wall may have been stimulated by the expansion of the gastric mucosa that was previously damaged by anisakis, and this stimulation may have caused ACNES.

Figure 1 (A) Gastroscopy image of mucosal erythema and anisakis infection. An anisakis infection is inadvertently found during upper gastrointestinal endoscopy. (B) Abdominal tenderness points (2×2 cm) with Carnett's sign. The pinch sign sensory disturbance is positive at this limited point. (C) Sonography image: the arrowhead points to the local injection site in the subcutaneous adipose layer and the rectal abdominis muscle sheath.

Pinpoint identification of abdominal tenderness is helpful for a definitive ACNES diagnosis. Mol *et al* indicated that ACNES can be suspected when at least two of the following features are present: sensory disturbance, pinch sign, Carnett's sign and response to a local rectus sheath anaesthetic injection.⁵ Since subjective symptoms may appear beyond a 2 cm area, detailed palpation is required to detect small tender spots. When a diagnosis of abdominal wall pain can be made because of a positive Carnett's sign, an abdominal CT is usually not necessary; however, a CT scan should still be performed when there are concerns regarding the intra-abdominal aetiology of the pain.⁶ Ultrasonography helps identify masses, abscesses and haematomas in the abdominal wall and deliver accurate and safe local injections into the area.⁶

Learning points

- ▶ Anterior cutaneous nerve entrapment syndrome (ACNES) may develop because of the abdominal wall stress, such as after endoscopic anisakis removal.
- ▶ A detailed patient history and careful physical examination can help diagnose ACNES.
- ▶ Ultrasonography also helps guide the injection accurately.

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