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Case Report

Pepper seed in fistula-in-ano: a rare case report

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ABSTRACT

Anal fistula is a chronic connection between the anal canal and perianal skin. They are relatively common proctological cases and have been associated with foreign bodies. This case is being reported due to the unusual findings of pepper seed and to raise surgeons' awareness of such possibilities. We report a 52-year-old male who presented with complaints of recurrent swelling in the anal region of 8 years which was associated with itching and spontaneously ruptured with purulent discharge and faecal effluents. There was no associated history of anal trauma or insertion of foreign objects. He observed good perineal hygiene and there was no use of spices or herbal medication in anal region. No previous history of anal surgery. The Fistulogram showed a sinus tract with demonstrable communication with anal canal for which a diagnosis of fistula-in-ano was made. He had a fistulectomy with findings of two fistulous tracts at 11 o'clock, 12 o'clock positions, and critical examination of the excised tissue revealed two pepper seeds. Fistula-in-ano is a complication of perianal abscess in most cases. It results from inflammation of the anal crypts (pyogenic cryptitis) which is the early stage of the suppurative process. The retention of purulent effluent leads to its' expansion into the various spaces adjacent to the rectum and anal canal. Despite reports of foreign bodies in the fistula tract, pepper seeds have yet to be reported to the best of our knowledge. Hence, we are reporting it. Fistula-in-ano is a relatively common proctological presentation and has been associated with complications from perianal abscesses and foreign bodies. However, the occurrence of pepper seed(s) is yet to be reported. This case is being reported due to the unusual findings and may be an avenue for further exploration of such possibilities.

INTRODUCTION

Anal fistula is chronic connection between the anal canal and perianal skin.[1] They are relatively common, as anal fistulas and abscesses contribute 70% of perianal diseases, which require surgical treatment and occur in 1:10,000 inhabitants per year.[1,2] Anal fistulas are more common in males and account for up to 5% of proctological consultations.[2]

Perianal fistulas mainly evolve from perianal abscesses.[2] The inflammation of the anal crypts (pyogenic cryptitis) is the early stage of the suppurative process, the retention of purulent effluent which then leads to its' expansion into the various spaces adjacent to the rectum, such as pelvirectal, inter-sphincter, perianal, and the ischiorectal spaces.[2]

Some cases of foreign object in fistula tract have been reported. A case report by Nikita et al in India reported fish bone as a foreign object in the fistula-in-ano.[3] A similar case of a fish bone was also reported in perianal fistula by Shakir et al in Pakistan.[4] This shows the possibility of such unusual foreign bodies in this anal fistula tract.

The peppers are vegetables botanically classified within the *Solanaceae* family as a *Capsicum* genus. The cultivated species within this genus is called *Capsicum annuum* L.[5] Pepper (Capsicum spp.), belonging to the

family of *Solanaceae*, is widely grown and used around the world as a fresh vegetable and spice.[6] Pepper includes essential nutrients for human metabolism, such as polyphenols, carotenoids, capsaicinoids, and ascorbic acid.[6] Although, pepper are good vegetable and spicy globally, it taken orally and ought not to be found in the anal canal.

This case is being reported due to its rarity as to our knowledge, pepper seed has never been reportedly found even in a fresh state in the anal fistula tract.

CASE REPORT

We present a 52-year-old male who presented with complaints of recurrent swelling in the anal region of 8 years.

The swelling was located in the right perianal region, initially small in size, but progressively increased in size. There was associated itching and swelling, which spontaneously ruptured with purulent discharge and feacal effluents. There was associated anal pain which relieved following spontaneous rupture of the swelling and discharge of the purulent effluent. There is no associated vomiting, bloody stool, passage of dark stool, or swelling in other parts of the body. No history of anal, trauma, use of anal toys, foreign objects or peno-anal penetration. He observes good perineal hygiene and does not apply spices or herbal medication in anal region.

No previous history of surgery (anal or gastrointestinal). He was not a known hypertensive or diabetic. He smoked cigarettes and marijuana for 20 years until 13 years ago when he stopped, and occasionally drinks alcohol.

At the onset of problems, he initially used antibiotics, but with the persistence of symptoms, he presented in our hospital for expert care.

On examination, he was a middle-aged man, afebrile, not pale, anicteric, acyanosed, not dehydrated, and there was no pedal edema.

The abdomen was full, moved with respiration, no area of tenderness, no splenomegaly, no hepatomegaly, and the kidneys were not ballotable bilaterally.

Digital rectal examination revealed good perianal hygiene, two fistula openings with surrounding induration at 11 o'clock, 12 o'clock positions discharging seropurulent effluent. The rectum was empty and the anal sphincteric tone was normal.

He had both laboratory and radiological investigations done, his full blood count result showed white blood cell count of 4200 u/L, haemoglobin was 15.4 g/dl, and hematocrit was 43%, which were all normal. There was mild thrombocytopenia of 109,000 u/L. His electrolyte, urea, and creatinine results were within normal limits.

The fistulogram (Figure 1) showed a sinus tract with demonstrable communication with anal canal. A diagnosis of fistula-in-ano was made.

He subsequently had fistulectomy with findings of two fistulous tracts at 11 o'clock 12 o'clock positions about 4 cm and 6 cm from the anal opening with an internal opening anteriorly and surrounding areas of induration discharging pus.

Following excision of the tract, a critical examination of the excised tissue revealed two pepper seeds. This finding is rare; hence, we are reporting it.

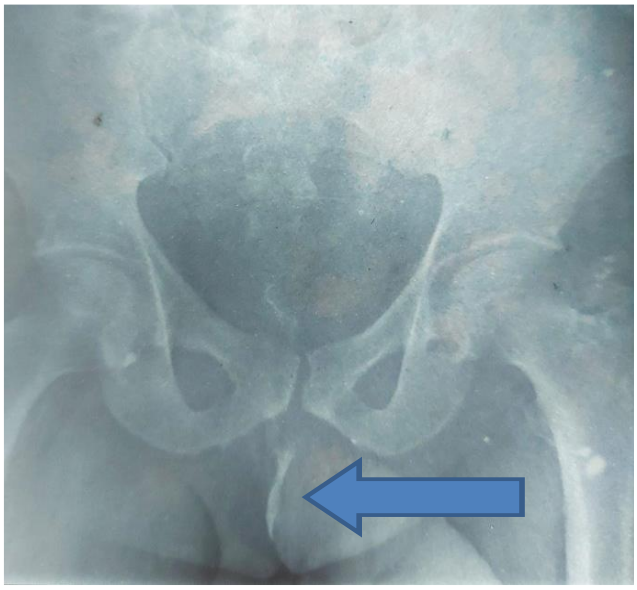

Figure 1: Fistulogram showing sinus tract.

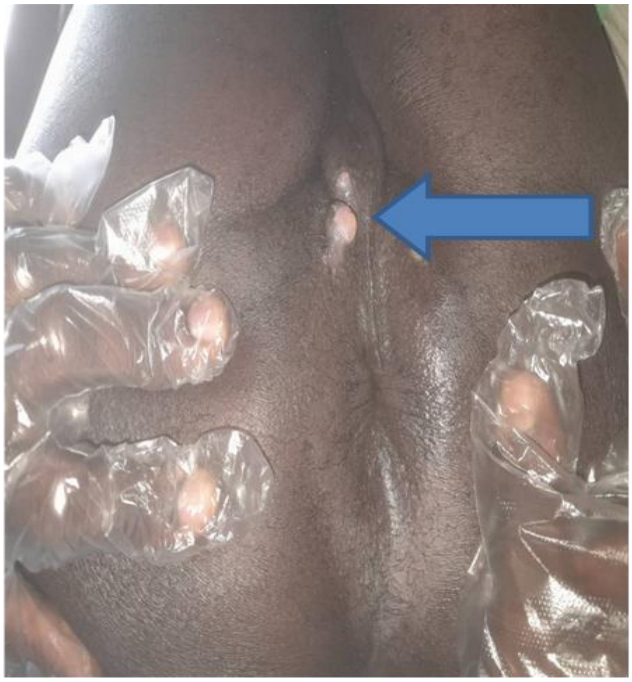

Figure 2: External opening of the fistula-in-ano.

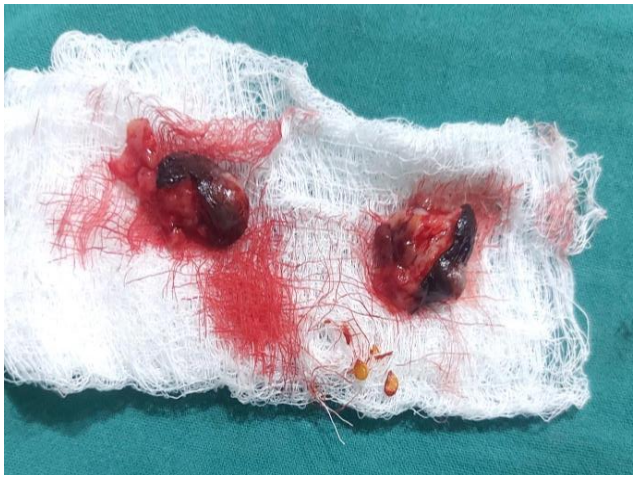

Figure 3: The excised fistula track and pepper seeds.

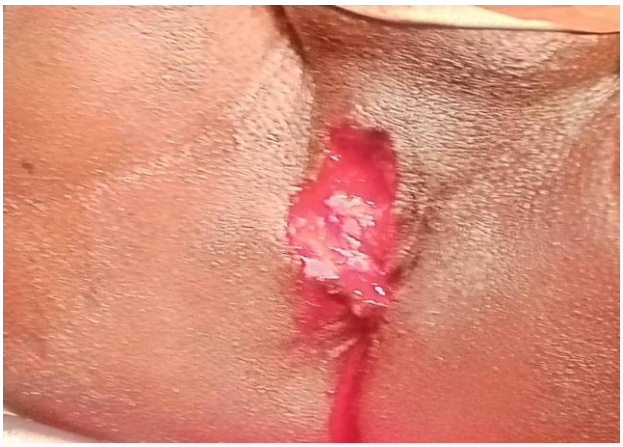

Figure 4: After anal fistulectomy.

DISCUSSION

Fistula-in-ano has been a challenging pathology for both patients and clinicians. This is due to the morbidities associated with it and the discomfort to patients. The prevalence of non-specific anal fistulae has been estimated to be 8.6 to 10/100,000 of the population per year, with a male to female ratio of 1.8:1.[7]

Studies have evaluated the occurrence of symptoms in patients with fistula-in-ano. In a study by Yadu et al the most common mode of presentation was discharge (74%), while 66% of patients presented with perianal pain, and 40% of patients had a history of perianal abscess.[7] Furthermore, 76% of Patients had a single opening, 24% of patients had an anterior opening, 76% of patients had a posterior opening.[7] This patient presented with complaints of discharge and external openings (Figure 2) without perianal abscess or pain.

Fistula-in-ano is an abnormal communication between the anal canal or rectum and the perianal skin, which causes a chronic inflammatory response.[7] It is mainly caused by previous anorectal abscesses. There is usually a history of recurrent abscess that ruptured spontaneously or was surgically drained.[7] The occurrence of such abscess is mostly secondary to infection of an anal gland (Cryptoglandular hypothesis of Eisenhammer).[7] In this patient, the presentation was chronic, and the presenting symptom was that of a perianal swelling which ruptured spontaneously, leading to draining of purulent effluent in keeping with fistula-in-ano.

While foreign objects have been associated with fistula-in-ano as a result of fish bone, there have been cases of mediastinitis, peritonitis, or intra-abdominal abscesses secondary to perforation by ingested foreign bodies reported in the literature.[3,4,8] The common sites of impaction and perforation include the appendix, caecum, and Meckel's diverticulum.[3]

For the cases of fish bone impaction, the force exerted by the anal sphincter during defecation or probably by the evacuated faecal matter can result in this sharp object being pushed through the anal canal with its pointed end leading into the perianal tissue.[3] This cannot be explained with pepper seed.

The pepper seed contains capsaicin and dihydrocapsaicin, which contain nitrophenols, which produce nitrosation of foodstuff, resulting in toxicity in the gastrointestinal tract.[9,10] In an experimental study, it was found that consumption of peppers produced exfoliation of intestinal epithelium in the lumen in rats.[11] A study by Lewis et al considered peppers as an ulcerogenic food substance, while another study showed that 60 and 80 mg/kg capsaicin can damage gastrointestinal tissues and cause significant inflammation in the jejunum, ileum, and colon.[12,13] In literature, capsaicin has been observed to downregulate the expression of COX-2 and β-catenin mRNA, promoting apoptosis through caspase 3 activation and inhibiting the proliferation of cells, and has also been implicated in gastrointestinal malignancies.[14,15] This could account for the role of pepper seed in the persistence of formation of this anal fistula.

Although, this patient did not insert any pepper seed via the anal canal nor did he apply any herbal concoction containing pepper into the anus, he takes food containing pepper occasionally. He had bowel preparation before surgery and a fistulogram that could have dislodged the pepper seed easily, but it remained till the discovery at surgery. Hence, this finding of pepper seed creates an academic hard puzzle difficult to explain.

For the simple and most distal fistulae, conventional surgical treatment such as lay-open of the fistula tract as a complete transection of the tissue between the fistula tract and anoderm is very effective with a success rate of up to 100%, complications such as incontinence following fistula surgery after laying open of intersphincteric and distal fistulae is low (10%).[16] This patient had a lay open fistulectomy (Figure 4), which also provided an opportunity for thorough inspection of the fistula tract

from where the pepper seed was discovered. His recovery was very good and the patient did not have any incontinence. He was seen at follow-up, and there has not been a recurrence of symptoms. This unusual case is being reported to raise surgeons' awareness of such a possibility, as this could serve as a basis for future research.

CONCLUSION

Perianal fistulas are relatively common proctological presentations, while various foreign objects have been found in the sinus tract, the occurrence of pepper seeds is yet to be reported. This case is being reported due to the unusual findings and may be an avenue for further exploration of such possibilities.

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