

Small bowel intussusception has been known to be associated with CD. In the past decades when barium radiologic studies were more commonly used in the diagnosis of CD, transient intussusceptions were seen in 20% of adults and children with proven CD, mostly asymptomatic (1). Intussusception was also recognized as a presenting symptom of pediatric CD (2), and recurrent intussusceptions were also reported (3). There is usually no identifiable lead point (4), and intussusception resolves without surgical intervention.

Intestinal pseudoobstruction is the condition in which there is no mechanical cause to explain the obstruction. It is a rare complication of CD and is usually reported in adults (5). As in intussusception, the mechanism of pseudoobstruction in CD is

not fully established. Gastrointestinal motility disorders in CD were proven previously. The mechanism for motility disturbances can originate from reduced absorption of food constituents, immunologic reactions or hormonal derangements (6). It has been suggested that intestinal motor abnormalities create hypotonic flaccid bowel loops, which disturb normal peristalsis and cause intussusception without a lead point (7). Delayed short bowel transit time and reduced motility can be responsible for the signs and symptoms of mechanical or pseudoobstruction in children with CD.

In conclusion, CD should be kept in mind in children with symptoms of small bowel intussusception or pseudoobstruction without an underlying cause.

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## Pulse granuloma, unusual localization: appendix

*Puls granülom, farklı lokalizasyon: apendiks*

*To the Editor,*

A 37-year-old male patient referred to the emergency service of the hospital with the complaints of abdominal pain and nausea for two days. Abdominal ultrasonography displayed non-compressed appendix vermiformis consistent with appendicitis.

In the surgical exploration, a retroceally localized inflamed and edematous appendix vermiformis was detected.

Macroscopic examination showed a large fatty-coated appendix with obliterated lumen.

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Light microscopic examination marked the findings of acute appendicitis and peritoneal nodules. Histological examination of these peritoneal nodules showed collagen fibril bundles, vessels, non-necrotizing granulomata with lymphoplasmacytic, eosinophilic and polymorphonuclear leukocytic inflammation (Figure 1). Oval starch granules were observed in the center of the granulomata, and were periodic acid-Schiff-positive after diastase treatment.

Pulse granulomas (PG) are lesions that result from the implantation of food particles of plant or vegetable origin and have been reported mainly in association with lung aspirations, the oral cavity with a history of oral procedures and in intestinal fistulae, colonic diverticula, or stomach ulcers. In addition, cases involving the skin have been reported, in one patient with jejunocutaneous and ileocutaneous fistulae and in one with a rectocutaneous fistula (1).

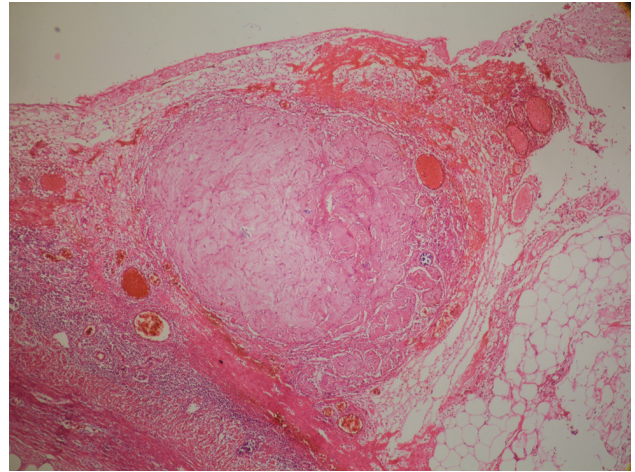
The cellulose part of plant foods, being indigestible, persists in the form of hyaline material, and invokes chronic granulomatous response (2), whereas the starch matter is digested.

Nomenclature may vary as starch, lentil, or vegetable granuloma. Starch reached the peritoneum of the appendix through small erosions that had developed as a complication of acute appendicitis.

Food starch granulomatous inflammation of the gastrointestinal tract is probably unrecognized, or it may lead to an erroneous diagnosis of Crohn's disease, sarcoidosis, tuberculosis, or some other granulomatous inflammation. If starch granules are found in the section, glove starch peritonitis and various worms and their ova enter the differential diagnosis (3).

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**Figure 1.** Non-necrotizing granulomatous nodule in the appendiceal serosa (H&E x4).

A prominent feature was the presence of starch granules, which exhibited a radial Maltese-cross birefringence (4). Since the starch was poorly digested by the peritoneal macrophages in the seven weeks after bowel rupture, the structure of the starch was sufficiently well preserved to show distinct differences from glove-powder starch (2).

Thus, cellulose plant cell walls led to the correct diagnosis of starch granuloma. However, when such components are less conspicuous, or when crystalline material predominates, the diagnosis may be less obvious. Attention is needed to avoid erroneous diagnosis of other systemic or infectious diseases.

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