

## Thigh Emphysema as a First Sign of Abdominal Disease

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### Rezumat

#### *Emfizeumul coapsei ca prim semn al unei afecțiuni abdominale*

Infecția coapsei este o complicație rară a sepsisului intra-abdominal care se poate prezenta cu emfizem. Raportăm un caz de infecție a coapsei secundară unei perforații colonice. O pacientă în vârstă de 61 ani, cu ciroză grad Child B6 și diabet tratat cu antidiabetice orale s-a prezentat în departamentul de urgențe pentru o durere persistentă la nivelul coapsei stângi asociată cu un disconfort abdominal, apărute de câteva zile. Ecografia a identificat gaze și fluid, la nivelul coapsei. Pacienta a primit lichide și antibiotice, dar în ziua următoare a declarat creșterea intensității durerii. Din acest motiv s-a efectuat examen CT care a decelat emfizem al coapsei datorat unei perforații intestinale. Pacienta a fost supusă laparotomiei. S-a efectuat procedura Hartmann cu rezecția a aproximativ 15 cm de colon sigmoid afectat. Leziunea de coapsă stângă nu a necesitat nici un tratament.

**Cuvinte cheie:** infecția coapsei, emfizem, perforație colonică

### Abstract

Thigh infection is a rare complication of intra-abdominal sepsis that can present with emphysema. We report a case of infection in the thigh resulting from colonic perforation. A 61-year-old woman with cirrhosis, grade Child B6 and diabetes treated with oral hypoglycemic drugs was referred to the emergency department because of a persistent pain in her left thigh and also for some abdominal discomforts during the preceding few days. Ultrasonography identified the presence of gas and fluid in the thigh. The patient received fluids and antibiotics but on the day after she reported an increase in pain. For this reason the patient was submitted to a CT scan that showed a thigh emphysema due to intestinal perforation. The patient was submitted to laparotomy. A Hartmann's procedure was performed, with resection of about 15 cm of affected sigmoid colon. The left thigh wound did not require any treatment.

**Key words:** thigh infection, emphysema, colonic perforation

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### Introduction

Thigh infection is a rare complication of intra-abdominal sepsis that can present with emphysema. For this pathology there is a high mortality reported in the literature, about 53% (1). In case of sigmoid diverticular disease it can present itself as a thigh soft tissue infection without any significant gastrointestinal symptoms.

We report a case of infection in the thigh resulting from colonic perforation.

## Case report

A 61-year-old woman with cirrhosis, grade Child B6 and diabetes treated with oral hypoglycemic drugs was referred to the emergency department because of a persistent pain in her left thigh and also for some abdominal discomforts during the preceding few days. Her medical history was significant for an appendectomy, and an insufficiently specified thigh trauma, that occurred 6 months before, and unclassified abdominal pain episodes, that occurred three and six years before. Upon examination the abdomen was palpable with a light pain in the left iliac fossa, and the patient's intestinal transit was normal without nausea or vomiting. The thigh was tender and swollen and the range of motion was decreased, moreover the skin of the thigh was warm and red to the knee. Laboratory test showed evidence of generalized inflammation with white blood cells (14,4 K/ $\mu$ L; normal range 4,10-10,90 K/ $\mu$ L), erythrocyte sedimentation rate (22 mm first hour, 55 mm second hour; normal range 6-11 mm in the first hour, 6-20 mm second hour) and C-reactive protein (32.5 mg/L normal range 0.5-1.0 mg/L) elevated. There was no fever. Ultrasonography identified the presence of gas and fluid in the thigh. The patient received fluids and antibiotics but on the day after she referred an increase of pain. For this reason the patient was submitted to CT scan that showed a thigh emphysema due to intestinal perforation (Fig. 1).

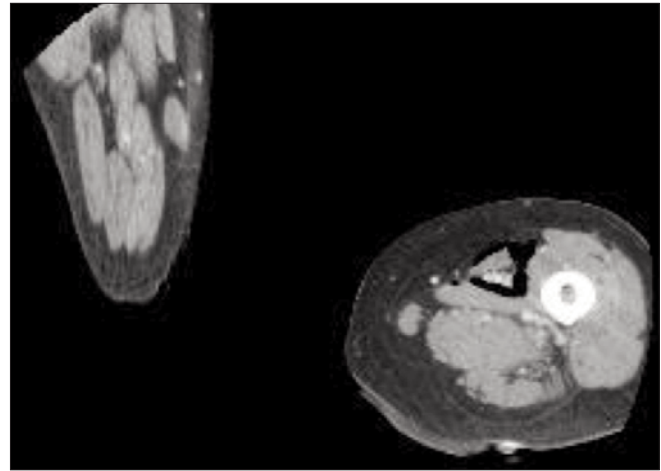
The patient was submitted to laparotomy. A Hartmann's procedure was performed, with resection of about 15 cm of affected sigmoid colon. The left thigh wound did not require any treatment. After ten days she was discharged. Five months later, the patient was still healthy.

## Discussion

The complications of diverticulitis are stricture, bleeding, perforation and fistula formation. Perforation can be associated with subcutaneous emphysema in the thigh, requiring an urgent surgical intervention.

Subcutaneous emphysema of the abdominal wall or lower limb has been recognised as an unusual sign of intra-abdominal sepsis either from intestinal perforation (enteric or colonic) or gas formation in an intra - abdominal abscess. The sepsis may result from either benign or malignant disease such as colonic cancer. More commonly thigh abscesses follow local infections such as pyomyositis secondary to trauma, infected haematoma, osteomyelitis, cellulitis or thrombophlebitis (2).

The presence of gas shadows on a radiograph of the thigh with associated clinical evidence of inflammation in the thigh is a cause of grave concern as it brings to mind the differential diagnosis of two life- and limb threatening conditions: necrotizing fasciitis and gas gangrene. Necrotizing fasciitis is a severe and potentially fatal soft tissue infection caused not only by group A streptococci but also by polymicrobial flora. It has changed from being a rare disease primarily affecting immunocompromised patients to one occurring more frequently among otherwise healthy individuals (3). Gas gangrene, an equally life-threatening severe condition caused by anaerobic



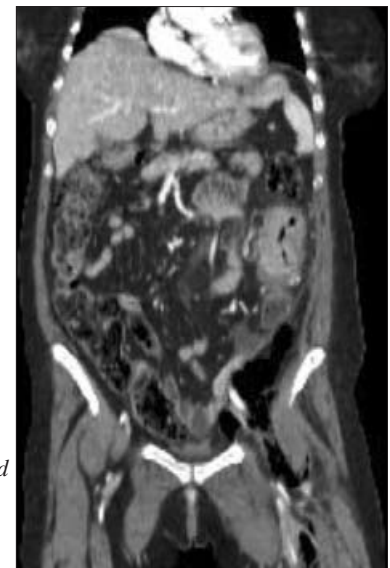
**Figure 1.** Gas in the left thigh between the muscle and subcutaneous space

microorganisms, can lead to the loss of a limb as well as life. The presence of either of these conditions requires rapid diagnosis and early treatment, as the mortality can range up to 80% (4)

Clinically the patient had no signs of sepsis, multiorgan failure, or confusion, that are usually associated with potentially fatal soft tissue infections. The patient was afebrile, alert and conscious throughout.

The computed tomography (CT) scans of the abdomen and pelvis identified a markedly thickened descending colon wall that was considerably heterogeneous throughout its course, with extremely narrowed lumen, and it was not distinguishable from localized collection in the pericolic zone and in the context and long of the abdominal muscles at the back, mixed with gas especially valuable in the context and long ileopsoas muscle, where they assume the characteristics of fluid and air extended up the left thigh (Fig. 2).

Anatomy can explain the unusual manifestation which our



**Figure 2.** Gas along the left ileopsoas muscle extended until left thigh

patient presented. Injection of air into the presacral space in corpse, results in surgical emphysema in the lower abdominal wall, thigh, and buttock regions. The routes by which such extension can occur are neurovascular bundles, defects in the abdominal wall, femoral vessels or through the pelvic floor alongside the rectal tissues (2).

In the present case the retroperitoneal perforation was mildly symptomatic, with hidden signs of peritoneal irritation. During the operation, a colonic diverticulitis perforation was found. Purulent material, which leaked under pressure, was used for bacteriological culture for a correct antibiotic therapy. Segmental resection of the colon with anastomosis, drainage of the abdominal cavity and antibiotics were the treatments for our patient.

## References

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