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## Spontaneous colo-vesical and colo-cutaneous fistula complicating a sigmoid diverticulitis: A case report

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## ABSTRACT

**INTRODUCTION:** Diverticular disease is a challenge in western countries. The occurrence of fistula complicating diverticulitis is uncommon. As a result, spontaneous and synchronous colo-vesical and colo-cutaneous is an even rarer situation.

**CASE PRESENTATION:** We report the case of a 68 years old patient with medical history of bilateral inguinal hernia surgery and diverticular disease. He was admitted for fecal fistula through to the left inguinal area and recurrent urinary tract infections evolving for 2 months. Clinical examination revealed fecaluria and colo-cutaneous fistula. Abdominal CT scan revealed the presence of air in the bladder associated with fistula tract between the sigmoid colon and the inguinal abdominal wall. Surgical management was realized in two stages. The first stage, consisting to an end-colostomy, was performed. The second stage will be laparoscopic colectomy and is not yet realized. In the follow-up, the patient is doing well with a good quality of life.

**CONCLUSION:** Spontaneous colo-vesical and colo-cutaneous fistula is an uncommon complication of diverticulitis. There is no guidelines about the management and the treatment should be tailored according to each patient characteristics. Laparoscopic surgery is a feasible and safe approach in the treatment.

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## 1. Introduction

This work has been reported in line with the SCARE 2020 criteria [11]

Diverticular disease is commonly seen in western countries and its incidence is still high in the recent years. Approximately, it affects 714 % of the population aged more than 80 years [1]. In fact, between 4–25 % of patients with diverticulosis will develop in the evolution, a complication requiring hospitalization [1]. The Hinchey classification is widely used globally to describe the different stages of perforated diverticular disease. However, some authors consider that Hensen and Stock classification is more suitable. According to this grading, diverticulitis with fistula formation is classified as group IIb [1].

Colo-cutaneous fistulas are very rare, accounting for 1 %–4 % of all fistulas complicating diverticular disease. In some cases, it can occur after percutaneous drainage of diverticular abscesses without subsequent resection [2]. In other part, colo-vesical fistula secondary to diverticulitis has a frequency of 5 % among patients with diverticulitis [2]. Therefore, association of colo-cutaneous and

colo-vesical fistula is an even rarer situation and particularly when it occurs without previous treatment (percutaneous drainage or surgery).

We report the case of a patient with spontaneous and synchronous colo-vesical and colo-cutaneous fistula.

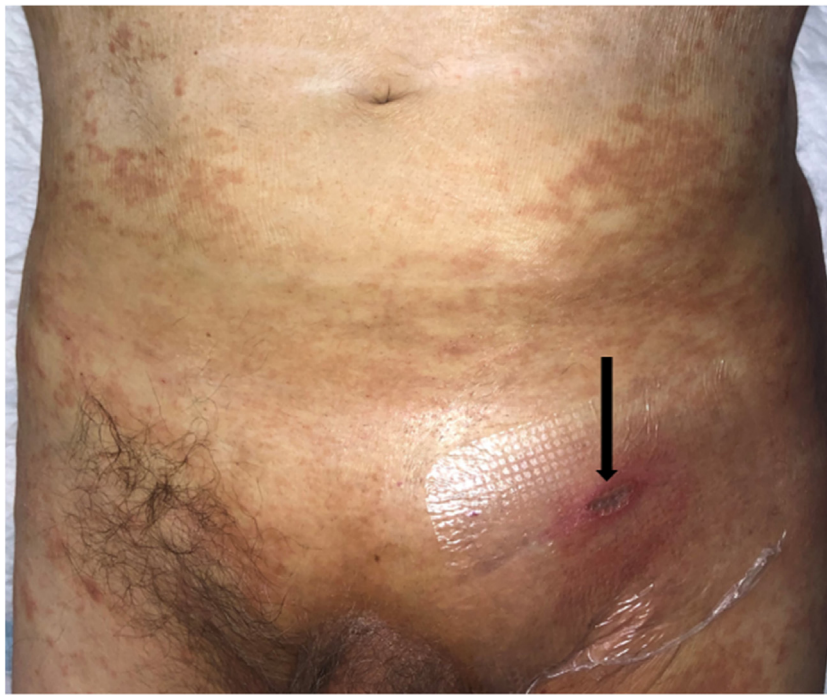
## 2. Case presentation

It is the case of a 68 years old male who was admitted in our department for fecal fistula in the left inguinal region. The patient medical history revealed bilateral inguinal hernia surgery 30 years ago. He had also a diverticular disease of the sigmoid colon evolving for 3 years. There was no previous hospitalization for acute diverticulitis. The patient presented also recurrent urinary tract infections for at least 2 months with ineffective antibio-therapy. Two weeks before his admission, he presented fecaluria secondarily associated with a fecal fistula at the inguinal region. Clinical examination confirmed fecaluria, and the fecal fistula with a diameter of 1 cm (Fig. 1). Biology revealed leukocytosis, positive C reactive protein and acute renal failure.

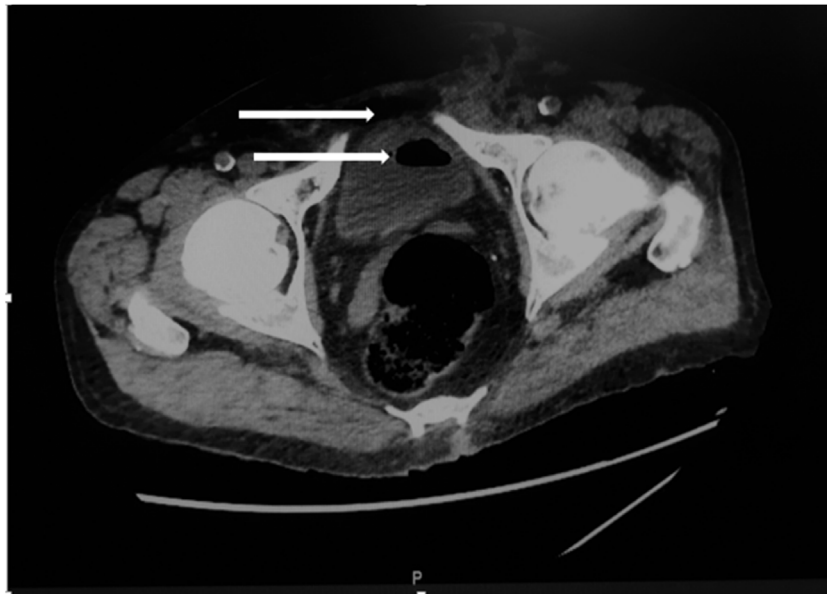
The abdominal CT scan without contrast revealed the presence of air in the bladder. (Fig. 2). Besides, there was a fistula tract between the sigmoid colon and the left inguinal abdominal wall (Fig. 3).

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**Fig. 1.** cutaneous fistula orifice.



**Fig. 2.** abdominal CT scan showed pelvic air and fluid collection and air in the bladder.

Surgical management was realized in two stages. The first stage, consisting to an end-colostomy to resolve the urinary tract infection, was performed. The second stage, which is not yet realized, will be laparoscopic colectomy associated with the treatment of renal failure. In the follow-up, the patient is doing well with a good quality of life.

### 3. Discussion

Colonic diverticular disease is a common clinical entity. Diverticulitis, defined by the inflammation or infection in a diverticula, is one of the most common complications of diverticulosis with a frequency of 20 % [1]. The others complications are intestinal

obstruction, abscess, hemorrhage and fistula formation. The occurrence of fistula is infrequent with an incidence of 20 % after surgical treatment for complicated diverticulitis [5].

In terms of locations, colo-vesical fistula is most common type, followed by colo-vaginal fistula [6]. Therefore, other locations exists as colo-uterine, colo-salpingeal or aorto-colic [7,8]. However, colo-cutaneous fistulas are very uncommon [2].

Colo-vesical fistula was first reported by Cripps in 1888 [3]. Diverticular disease is the most common etiology of colo-vesical fistula approximately in 91 % [4]. Among patients with diverticular disease, more than 5% will develop a colo-vesical fistula in their evolution [2]. This incidence is estimated to be approximately three times greater in men than in women because of the inter-

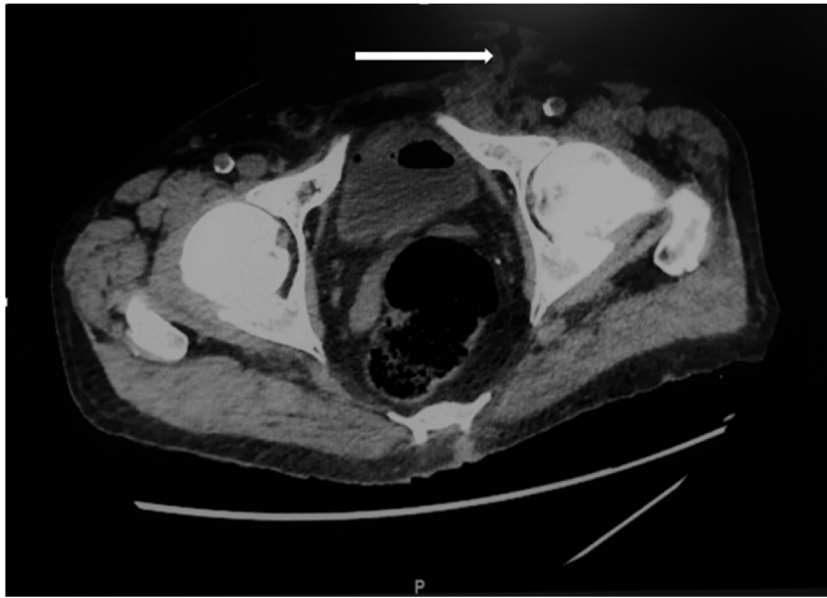


Fig. 3. colo-cutaneous fistula tract.

position of the uterus between the sigmoid colon and bladder [9].

Colo-cutaneous fistula represents between 1–4 % of all diverticular fistula [2]. It is the less common diverticular fistula after colo-colonic fistula [6]. The incidence of fistula formation is higher in patients previously treated for acute perforation or abscess [1]. As well, colo-cutaneous fistulae is generally caused by percutaneous drainage of diverticular abscesses without resection [2]. However, spontaneous colo-cutaneous fistula, is very rare situation. In even rarer cases, like in our patient, colo-cutaneous fistula may coexist with a colo-vaginal or colo-vesical fistula [1].

Clinical presentation and abdominal CT scan can help for the diagnosis. Fecaluria or pneumaturia are most common symptoms of colo-vesical fistula, followed by urinary tract infection [10]. The majority of colo-cutaneous fistulas reported in the literature are between the colon and the anterior abdominal wall. CT scan is the most used imaging modality, and confirms the presence of air in the bladder or the fistula tract [10]. Colonoscopy can be done to rule out malignancy. When CT scan is unavailable, cystogram, barium enema or cystoscopy can help in the diagnosis [10].

Laparoscopic sigmoid resection with end-to-end anastomosis is safe and feasible. Currently, it is the recommended treatment recurrent sigmoid diverticulitis because it reduces the incidence of major complications, length of hospital stay and post-operative pain [4,10]. Furthermore, open approach can be used. With his acute renal failure, our patient was not immediately operable. This explains why we opted with the management in two stage. At first, an elective colostomy was performed and he is waiting for laparoscopic colectomy. Surgery will consist to a sigmoid colectomy with fistula tract resection. The anastomosis should be realized away from the location of the abscess or fistula [1].

Surgical management of the colo-cutaneous fistula remains controversial. Many techniques have been reported for the management, it's including Foley catheter drainage only, simple closure of the fistula, omental patch to close the bladder defect, and partial or total cystectomy depending on the patient characteristics [10].

With the management in two stage for our patient, a colectomy with immediate anastomosis will performed.

#### 4. Conclusion

Spontaneous colo-vesical and colo-cutaneous fistula is an uncommon complication of diverticulitis. There is no guidelines about the management and the treatment should be tailored according to each patient characteristics. Laparoscopic surgery is a feasible and safe approach in the treatment.

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No conflicts of interest.

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#### Ethical approval

My publication is exempted from ethical approval of my institution.

#### Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images.

#### Author contribution

Dr Audrey Cagniet are supervising this work.  
Dr Dara Pichvirackboth helping for writing manuscript.

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