

## Case Report

# Unusual presentation of peripancreatic abscess associated with streptococcus anginosus and colonic diverticulosis

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## ABSTRACT

Pancreatic abscesses are rare and usually occur as a pancreatitis complication. The absence of acute pancreatitis and the clinical presentation that mimics a neoplasm are very unexpected. A 49-year-old man, known with arterial hypertension and chronic infection with virus hepatitis B came to the hospital for weight loss, marked asthenia, nausea/vomiting and jaundice, associated with mild pain in the upper abdomen. At admission, without fever and no medical history of acute pancreatitis. Laboratory values showed an important inflammatory syndrome, near normal pancreatic enzymes and increased tumour markers. Abdominal computed tomography (CT) revealed a heterogeneous fluid collection with gas bubbles inside, localized into the lesser sac that tended to extend peri splenic, towards the anterior and posterior pararenal spaces and the pelvis. Surgery has led to evacuation of peripancreatic and left retrocolic abscesses, associated with debridement and peritoneal drainage. The culture yielded *Streptococcus Anginosus*. At 7 days post-intervention hemoperitoneum occurred and was required a second intervention for haemostasis. Subsequent favourable clinical and biological evolution, with patient discharge from the clinic 16 days after admission. Repeated CT scans of the abdomen showed resolution of lesions and at colonoscopy it was observed uncomplicated colonic diverticulosis. In this case is highlighted a rare presentation of a peripancreatic pyogenic abscess caused by *Streptococcus anginosus*, associated with colonic diverticulosis.

**Keywords:** Acute pancreatitis, Colonic diverticulosis, Cystic pancreatic neoplasm, Infective endocarditis, Peripancreatic abscess, *Streptococcus anginosus*

## INTRODUCTION

The *Streptococcus anginosus* group (SAG), also known as *Streptococcus milleri*, in the honour of the microbiologist W.D. Miller, is a subgroup of viridans streptococci, comprised of three distinct species: *S. anginosus*, *S. constellatus* and *S. intermedius*.<sup>1,2</sup> In 1965, Guthof was the first to describe this group of streptococci, after they have been isolated in the dental abscesses and the infiltrates in the region of the oral cavity.<sup>2</sup> These microorganisms were also found in the

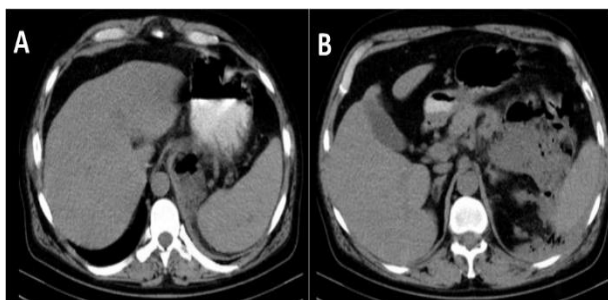
gastrointestinal tract, as part of the normal commensal flora.<sup>3</sup> While *S. anginosus* is found in the habitual microflora of the gastrointestinal and the genitourinary tract, *S. intermedius* is more frequently in dental plaque.<sup>3-5</sup> Their potential to form abscesses is well known.<sup>6</sup> Thus, intra-abdominal abscesses caused by *Streptococcus anginosus* are rare, these organisms are capable to determine a various abdominal infections, such as appendicitis, peritonitis, cholangitis, abdominal wound infections and postoperative or posttraumatic infections, which can subsequently lead to the development of a

pelvic abscess, liver abscesses or subphrenic abscesses.<sup>7,8</sup> In the case of positive blood cultures with streptococcus anginosus, should be considered an occult abdominal infection, a distant focal infection or infective endocarditis.<sup>9,10</sup> The absence of an extra-abdominal identifiable focus of *S. anginosus* infection, lack of a medical history of acute pancreatitis, and nonspecific symptomatology, sustain a neoplastic diagnosis instead of an abscess. Herein, we described a 49-year-old male with a peripancreatic liquid collection that mimicked malignancy, which was diagnosed as a peripancreatic abscess caused by *Streptococcus anginosus*, associated with colonic diverticulosis.

## CASE REPORT

A 49-year-old man, known with arterial hypertension and chronic infection with virus hepatitis B, came to the surgery department for weight loss (5 kgs in the last month), marked asthenia, nausea/vomiting and jaundice, associated with moderate pain in the upper abdomen.

At admission, without fever and no documented history of acute pancreatitis. On physical examination, he presented abdominal distension with generalized tenderness at palpation. Abdominal radiography revealed a normal aspect, without signs of bowel obstruction or pneumoperitoneum. Laboratory values showed an important inflammatory syndrome (WBC, 23400/ml with 83.7% neutrophils; ESR, 91 mm/h; CRP, 9.4 mg/dl); mild anaemia (Hb, 11.5 g/dl); blood urea nitrogen, 84.6 mg/dl; creatinine, 2.52 mg/dl; direct bilirubin, 1.9 mg/dl; pancreatic enzymes nearly normal (Amylase, 146 U/L; Lipase, 398 U/L) and an increased tumour marker (CA19.9, 98.7 u/mL). Urinalysis revealed the presence of rare white blood cells and frequent red blood cells, clear look and negative cultures for MRSA, Enterobacteriaceae, Acinetobacter spp and Pseudomonas spp.



**Figure 1: Abdominal CT scan. A): Retro gastric collection, and B): Caudal peripancreatic collection, having mixed fluid/para-fluid densities with gas bubbles inside (23 Nov 2016).**

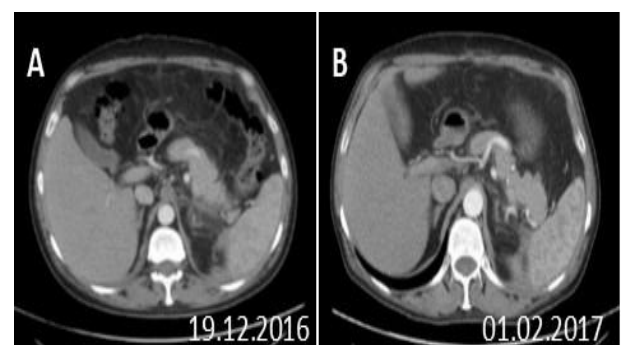
24 hours after admission, body temperature increased to 39.3 °C. Two sets of blood cultures were taken and both were negative for aerobic and anaerobic microorganisms. Chest radiography was normal. Abdominal computed

tomography (CT) revealed a heterogeneous fluid collection with gas bubbles inside, localized into the lesser sac that tended to extend peri splenic, towards the anterior and posterior pararenal spaces and the pelvis. (Figure 1). In the same day, in the pre-operative evaluation, transthoracic echocardiography excluded infective endocarditis. Surgery has led to evacuation of peripancreatic and left retrocolic abscesses, associated with debridement and peritoneal drainage. The antibiotic treatment was intravenous, with ciprofloxacin and gentamycin, according to infectious diseases specialist recommendation and also to antibiogram results. The culture yielded *Streptococcus Anginosus* which was sensitive to the most antibiotics tested (Table 1). Cytology showed inflammatory cells, without evidence of malignancy. At 7 days post-intervention hemoperitoneum occurred, due to bleeding from the remaining cavity. It needed a second intervention for haemostasis. Good evolution under ciprofloxacin (2 x 200 mg/day) and gentamycin (2 x 80 mg/day) systemic therapy for 12 days. The patient was discharged after 16 days, afebrile, with a good overall status and quasi-normal limits of laboratory values: WBC, 10500/ml; ESR, 15 mm/h; CRP, 4,5 mg/dl; Hb, 10.8 g/dl.

**Table 1: Results of antibiogram for the tested antibiotics.**

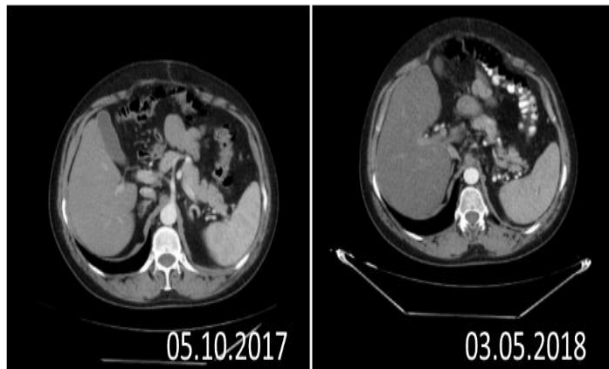
Antibiotic sensitivity		
<b>Benzylopenicillin</b>	≤0.06	S
<b>Ampicillin</b>	≤0.25	S
<b>Cefotaxime</b>	≤0.12	S
<b>Ceftriaxone</b>	≤0.12	S
<b>Levofloxacin</b>	≤0.25	S
<b>Erythromycin</b>	≤0.12	S
<b>Clindamycin</b>	≤0.25	S
<b>Linezolid</b>	4	-
<b>Vancomycin</b>	1	S
<b>Tetracycline</b>	4	R

S=Sensitive, R=Resistant.



**Figure 2: Abdominal Contrast-enhance CT scan. A): CT-image showing the pancreas with increased dimensions and multiple pancreatic caudal collections (19 Dec 2016), B): pancreas with slightly diminished dimensions and dimensional regression of peri splenic and peripancreatic fluid collections (01 Feb 2017).**

One month later, colonoscopy revealed some uncomplicated diverticula in the transverse, ascending and sigmoid colon. The subsequent CT images showed favourable evolution, with lesions in regression (Figure 2) that evolved to their full resolution after 18 months of follow-up (Figure 3).



**Figure 3: Abdominal contrast-enhanced ct scan. A) and B): CT-images revealing complete resolution of fluid collection, and a normal aspect of the pancreas.**

## DISCUSSION

A pancreatic abscess in the absence of pancreatitis is rare.<sup>11</sup> The streptococcus anginosus ability to cause abscesses and systemic infections is a unique characteristic that sets them apart from others streptococci groups, such as *S. pyogenes* (group A Streptococcus) and *S. agalactiae* (group B Streptococcus).<sup>3,6,12</sup>

Also, as a part of the normal human flora, these microorganisms cause infections that range from minor oral infections to serious, complicated life-threatening infections, like in cases when they lead to the formation of abscesses in lungs, brain, liver, kidney, soft-tissue or pancreas.<sup>9,13</sup> Bacteraemia from the anginosus group is rare, and usually is the result of an identifiable localized infection.<sup>13</sup>

Further, this group of bacteria is associated with underlying diseases of hepatic and biliary tract, with neoplasia or diabetes.<sup>9,12,13</sup>

In our case, both sets of blood cultures that were taken were negative for aerobes and anaerobes microorganisms. In addition, the historical of chronic infection with virus hepatitis B could be a factor that led to immunosuppression and also to favour an infection with streptococcus anginosus.

The unspecific symptomatology and the absence of an identifiable infectious focus, as presented in our case, sustained a possible neoplastic pancreatic pathology. In this situation, the histopathological examination is required for diagnosis.

The computed tomography is not helpful in differentiating between a pancreatic abscess and a cystic pancreatic neoplasm. However, preoperative contrast-enhanced endoscopic ultrasonography (EUS) has been reported to be very useful for the diagnosis of pancreatic disorders.<sup>14</sup> In addition, EUS-guided fine needle aspiration cytology has proved to be very sensitive and specific for a cystic pancreatic lesion.<sup>15</sup>

In our centre, the EUS is not available. In such circumstance, surgery should be considered for intra-abdominal abscesses that require peritoneal drainage and large debridement.

In this case, *Streptococcus anginosus* was identified. *Mycobacterium tuberculosis*, *Klebsiella pneumoniae*, *Salmonella typhi* and *Corynebacterium coyleae* infections have been reported too.<sup>15-20</sup>

Extension of the abscess from nearby anatomic structures, hematogenous spread from a distant focus of infection, or lymphatic spread from the intestinal tract, are other possible causes for pancreatic abscesses having no history of acute pancreatitis.<sup>14,21</sup> *Streptococcus anginosus* group, as part of the normal gastrointestinal flora, it is rarely implicated in disseminated infections originating from colon diseases.<sup>12,22</sup>

Nevertheless, there are reports that describe an association between *Streptococcus anginosus* infection and colorectal, oesophageal, gastric cancers and endocarditis.<sup>23-25</sup> Referring to colonic diverticulitis, there were reported a few cases of brain abscesses that were associated with it.<sup>12,26-28</sup> In our case, the presence of colonic diverticulosis could be a plausible cause for the peripancreatic infection dissemination and may sustain the association between colonic disorders and streptococcus anginosus infection.

Although, in a few case reports, members of the *Streptococcus anginosus* group demonstrated resistance to penicillin, they are usually sensitive to this and to other beta-lactam antibiotics.<sup>29-31</sup> In our case, *Streptococcus anginosus* was sensitive to the most antibiotics tested. The clinical evolution and imagistic aspects were favourable, as a result of the antibiotic therapy and surgical treatment.

## CONCLUSION

Pyogenic peripancreatic abscesses in patients with no history of pancreatitis can mimic infected pancreatic cystic neoplasms.

In the circumstances of *Streptococcus anginosus* infection, endoscopic evaluation of the digestive tract may help to identify other lesions that require, in some cases, a complex treatment approach. Furthermore, such patients need clinical and imaging monitoring in order to

diagnose the progression of potentially malignant diseases.

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