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Supralevator anal Abscess; A High Morbidity Condition in an Immunosuppressant Patient with Comorbidities: A Case Report

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Abstract

A 70 yrs old immunosuppressant patient was admitted due to moderate fever and lower pelvic and backspace pain with sciatica neuralgia. His increased CRP level with computed tomography (CT) scan confirmed he had a vast supra levator abscess. His examination under anesthesia helped in the decision to choose the inwards of the anorectal canal drainage of the supra levator abscess. The main operation was TROPIS, but there was a need for two more drainages; one by radiologic interventional technique and one by surgery for the outwards of anorectal canal drainage of the ischiorectal fossa abscess. An increase in the hospital stay of the patient for 38 days was registered from the initial admission to the final regression of the abscess cavity and clinical improvement of the patient.

Keywords: *anal, supra levator, abscess, morbidity.*

Introduction

The spectrum of acute inflammatory anorectal conditions varies from simple self-limited entities to more complex situations with high morbidity and mortality if they are not diagnosed correctly and appropriately treated by surgery.
Most times, diagnosis is accessible based on physical examination of the perineum and the presence of local inflammatory signs. At the same time, if deep anatomical anorectal areas are affected, such as the supra levator space, general clinic-laboratory signs of inflammation and imaging data are essential in the diagnosis of a deep anorectal abscess as the local inflammatory signs on the perineum may not be present. The most common etiology of anal abscesses is the crypto glandular theory of infected anal glands in 75-80% of patients [1], and the remaining are secondary etiologies and mainly anal Crohn's disease.

Supra levator abscess is the rare location of an anal abscess, with an incidence ranging between 3-10% in prospective studies and 0-28% in retrospective studies [2] but with high septic recurrences ranging between 0-53% in various reports.

The most common imaging investigation is the computed tomography (CT) scan of the perineum [3] due to its availability in Emergency Departments and guides further surgical therapy. Magnetic Resonance Imaging (MRI) scan is used in more chronic conditions such as anal fistulas and is the gold standard imaging investigation. MRI, if it is available in use in Emergency Departments, is recommended to be used due to its high contrast tissue resolution.

The main goal of surgery in supra levator abscesses is the sufficient drainage of the abscess before the development of a complex anal fistula with implications in different surgical therapy. Most supra levator abscesses, due to rarity, have been presented in the literature as case reports and case studies, describing the particular characteristics, the treatment, and outcomes; this condition has been associated with high morbidity, and despite the difficulties in surgery and reoperations, little evidence exists in the literature regarding the presence of this condition in immunosuppressant patients. This case report presents an immunosuppressant patient with a supra levator abscess and severe comorbidities. We describe a step-by-step approach from the initial diagnosis to the final regression of the patient.

Case Report

A 70 yrs old male patient was admitted from the Emergency Department (ED) Unit due to his severe lower pelvic pain, inability to walk due to lower back pain and permanent right sciatic neuralgia, and severe constipation over the preceding 20 days. The duration of his symptoms was 20 days before his hospital admission, with a daily worsening of his symptoms. He reported a moderate intermittent fever at 37.5-38 ^{o}C the previous two days before his admission and his past medical history and comorbidities included: metastatic lung cancer with adrenal, bone, and single brain metastases. Brain radiotherapy was completed one month before the patient's access to the Hospital; the patient was under chemotherapy agents for lung cancer and 6mg/day methylprednisolone due to his having epileptic spasms, myocardial infarction with two coronary stents, and arterial hypertension.

During physical examination of his abdomen, there was a slight pain in his right lower inguinal area, and the macroscopic examination of his perineum appeared normal, without any inflammatory signs in his ischial/anal/ischiorectal fossa areas. An anorectal finger examination was impossible and incomplete due to his intense anorectal pain, and the proctoscopy was not performed.

The results of his laboratory and radiology imaging data, demonstrated a slight decrease in his white blood cell count at 3.300/μl and increased C - reactive protein at 411mg/L. His CT scan with intravenous contrast revealed a right posterolateral anal supra levator abscess of 10 cm in maximum length and 6.5cm of full width which had extended from the posterior perineum to the right inguinal area and pubic symphysis. The external anal sphincter was thick, and the pus was located above the right levator ani muscle and below the peritoneum (extraperitoneal location). The posterior segment of this cavity was close to the posterior anorectal canal with the morphology of a fistulous track next to the posterior anorectal canal, while the middle and anterior segment of this cavity was next to the right major sciatic foramen with its neurovascular content reaching the posterior aspect of his pubic symphysis (figure 1).

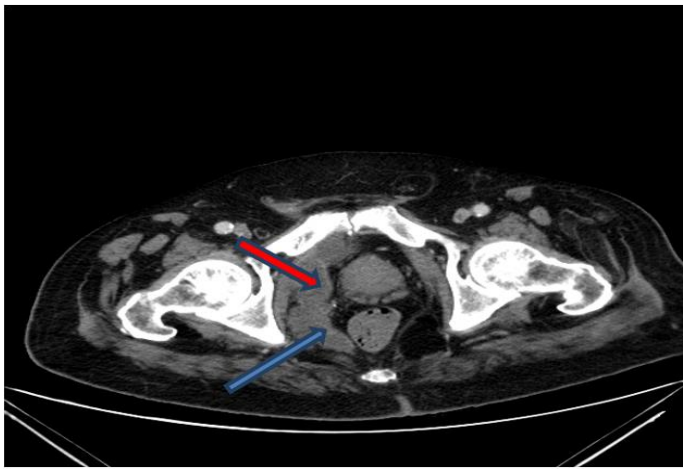

Figure 1: Right anal/supra levator abscess-cavity. Posterior segment (blue arrow): right posterolateral location on the anorectal canal. Anterior segment (red arrow): right anterolateral cystic area. Extraperitoneal location.

During EUA (examination under anesthesia) before the operation, the patient had a bulking mass with a right posterolateral location protruding into the anorectal canal with a normal appearance of the mucosa. The posterior dentate line at 6th o'clock revealed an opening dripping pus. This opening was probed with a metal probe with direction to the supra levator space and drained a significant amount of pus. A finger massage on the protruding bulking mass helped the drainage of pus. The preferable operation performed was the Trans-anal Opening of the Inter-sphincteric Space (TROPIS) [4], and the cavity was washed with normal saline through an intravenous catheter. The inter-sphincteric space was drained and laid open through a trans-anal route. Pus cultures showed Escherichia Coli, Enterococcus Faecium VRE, and Pseudomonas Aeuroginosa. The antibiotic therapy used included: Piperacillin, Daptomycin, and Metronidazole based upon the recommendations of the specialists of the Infectious Diseases Department. The early postoperative outcomes in the first ten days after surgery were the following: normal bowel function, a decrease of fever at typical values, an increase of WBC count at 8.500/μl, fall of CRP at 70mg/L, improvement of the right sciatic neuralgia and remaining pain in the right lower groin.

Ten days after surgery, a new CT scan was undertaken which showed decompression of the posterior segment of the cavity (the area next to the operative surgical site). The anterior segment was undrained, and under radiologic guidance by CT scan, a catheter was placed into the cavity (figure 2). The abscess cavity had high inflammatory activity, and at the daily practice, the pus output of the catheter was documented to have ranged from 20-40ml daily; 10 days after the catheter placement, only traces of pus in the catheter bag were recorded. Two washings per day were undertaken through the catheter.

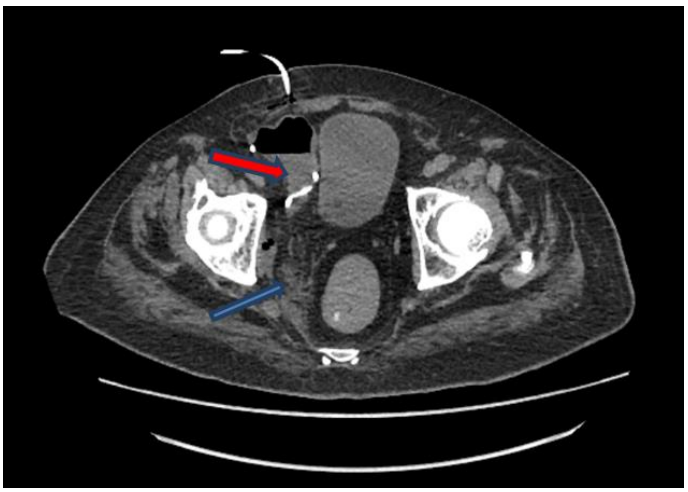

Figure 2: 10 days after surgery. Posterior segment of the abscess cavity (blue arrow): inflammatory activity, remnant pus, cavity with air, well-drained area. Anterior segment of the cavity: undrained area, an image of an abscess (red arrow), pigtail catheter introduced under CT guidance (white contrast appearance).

On the 24th postoperative day, an abscess in the right ischiorectal fossa was diagnosed and was drained outwards of the anorectal canal with local anesthesia at the patient's bed. The abscess cavity was washed twice per day.

Despite the clinical and laboratory tests result improvement of the patient, 30 days after the initial surgery, the patient presented with multiple diarrheic episodes due to Clostridium difficile bowel infection (positive Antigen with Toxin A and B -). He received Vancomycin for eight days, and after discharge from the Hospital, the patient continued the therapy at home for six days. The patient was under Hospital care for 38 days. The catheter of the abscess cavity was removed two days before the discharge of the patient from the Hospital. A new CT scan before the discharge showed significant imaging improvement (Figure 3).

Figure 3: Supra levator cavity; 36 days after surgery and radiological drainage of the abscess, minimal inflammatory changes (blue arrow). Supralevator space appears empty (red arrow).

Discussion

According to the past history of the patient, the supra levator abscess was of cryptoglandular etiology. This type of anal sepsis is the rarest and high complexity condition in the large spectrum of anal septic conditions. The supra levator abscess during his natural history may create a supra levator fistula; according to the old and new systems of classification of anal fistulas, this type of fistula (grade V) is the most complex and severe type of fistula [5] with implications in further surgical treatment, where the surgical treatment includes only sphincter saving techniques.

With regard to the clinical and laboratory parameters of the patient, the decreased WBC count may be explained due to immunosuppression or sepsis and was restored to normal limits a few days after surgery. The CRP level in high values showed a progressive and late fall postoperatively with typical values before discharge from the Hospital. With regard to clinical symptoms, a regression of the patient's lower pelvic and backspace pain was gradual after the abscess drainage. The most refractory sign was the right sciatic neuralgia with complete remission and the ability to walk before being discharged from the Hospital.

The usefulness of antibiotics in more chronic conditions of anal sepsis may be is null, but in more acute phases, the administration is common in daily clinical practice, but the usefulness is a matter of debate; our Hospital Committee for infectious disease recommended three different schemes of antibiotics based upon the results of microbial cultures and clinical response of the patient and finally a Clostridium Difficile colitis should be treated before the patient is be discharged from the Hospital. The natural history and evolution of crypto-glandular anal infection from anal abscess to fistula seems not to be influenced by the use of antibiotics [6]; the pathogenesis of this condition is relatively obscure and under study at the present times [7]. The primary therapy entails sufficient surgical drainage of the abscess cavity, and according to the characteristics of the supra levator abscess, the correct way of surgical drainage should be chosen [8]. This expectation of complete drainage many times is achieved slowly. Thus, recurrences and surgical re-interventions are many times reported in the literature.

The patient underwent three abscess drainages during the in-hospital stay; the first drainage was performed after admission, inwards of the anorectal canal. The preferable choice of operation was TROPIS, a new, easy, and ingenious process, lay open technique of the inter-sphincteric space and sphincter shaving procedure. In the second CT scan, ten days after surgery, the drainage of the abscess cavity was satisfactory, with a decrease in size, despite the fact that it was incomplete mainly within the anterior segments of the cavity next to the pubic symphysis, and this had happened due to the large size of the abscess, affecting multiple anatomical spaces of the anorectal canal rather than the surgical procedure performed. During the second CT scan, these segments were noted to have been drained by a catheter placed under radiologic guidance.

Despite the two drainages, with a high inflammatory activity of the abscess cavity producing daily 20-40ml pus, finally, the abscess cavity was fistulizing in the right ischiorectal fossa, a new abscess was drained outwards of the anorectal canal, showing the complexity in the natural evolution of the supra levator abscess and mainly in an immunosuppressant patient. Thus, this patient finally had a complex cryptoglandular abscess in many anorectal anatomical areas, such as the supra levator, inter-sphincteric and ischiorectal fossa.

It would be advised that a study of complex fistulas with the undertaking of an MRI study for a correct classification of anorectal fistula and further surgical management should be undertaken. Our goal was to treat the acute phase of cryptoglandular anal abscess and discharge the patient to continue chemotherapeutic schemes from the Oncologic Department of the Hospital, further surgery for anal fistula formation seems not to be in other therapeutic options as this patient has a bad prognosis for the future due to generalized lung malignancy.

Conclusion

Immunosuppressant patients with supra levator abscesses have a complex surgical management.

Complete surgical drainage by surgical or radiologic procedures is the primary therapy.

CT scan and MRI scan are essential diagnostic investigations and the findings from the undertaking of CT scan and MRI scan should provide a guide further surgical treatment.

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Conflict of Interests- None

Consent statement-The written consent from the patient was obtained for the publication of this case report.

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