Post-injection retroperitoneal abscess in a drug-addicted patient
Case report

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ABSTRACT: Abscesses developing within the retroperitoneal space are complicated and serious infections, with insidious presentation, which leads to high rates of mortality and morbidity. We describe a rare case of retroperitoneal abscess formation in a drug addicted patient after attempt of intravenous injection of morphine in the right femoral vein.

A 22-year-old male presented to our emergency department with high fever (40°C) since two days. The patient mentioned that he was addicted to narcotics and that he used to make morphine injections in both femoral veins. The clinical examination revealed the presence of an abscess in the right inguinalfemoral region as well as a second in the left thigh. Both abscesses were drained under sedation. However, despite drainage, the fever persisted over the next few days. The patient underwent computed tomography of the abdomen which showed the presence of a retroperitoneal abscess extending along the right psoas muscle and reaching the inguinal region. The patient was led again to the operating room, where the retroperitoneal abscess was drained through a right paramedian incision under general anesthesia. The residual cavity was irrigated and a wide drain tube was placed. The cultures showed the presence of Pseudomonas aeruginosa. The patient was hospitalized in the Intensive Care Unit for 46 days and was discharged from our clinic after approximately three months in good general condition.

It is concluded that the extension of post-injection abscesses of the inguinal region in the retroperitoneal space is a rare but extremely life-threatening situation, which has to be diagnosed and treated abruptly.

Key Words: Retroperitoneal abscesses, Drug addict.

INTRODUCTION

Retroperitoneal abscesses are an infrequent condition with potentially lethal implications. Their insidious onset and difficult diagnosis delay treatment, increasing considerably the morbidity and mortality associated with this disease. The most frequently responsible pathogens are gram-negative bacilli, and these abscesses are for the most part secondary to disease of the kidneys, other organs, or neighbouring anatomic structures (duodenum, pancreas, colon and lumbar spine). Primary retroperitoneal abscesses, in the absence of the above mentioned infectious foci in the retroperitoneal space, are extremely rare and usually the result of hematogenous dissemination from a skin focus. In recent decades, the introduction of imaging techniques such as ultrasonography and computed tomography has substantially improved diagnostic performance and reduced the time to diagnosis. Likewise, the appearance of new, less aggressive forms of treatment, such as percutaneous drainage guided by CT or ultrasonography, offer an attractive alternative to traditional surgical drainage for some patients.

We describe a rare case of retroperitoneal abscess formation in a drug addict, after his attempt to inject morphine in the right femoral vein of his.

CASE REPORT

A 22–year-old young male presented to the emer-
Emergency department complaining for high fever (40°C) since two days. The patient mentioned that he was addicted to narcotics and that he used to make morphine injections in both femoral veins. On examination, he was febrile (38.5°C), tachycardic (130 beats/min), and had a mildly distended abdomen that was diffusely tender. Bowel sounds were present. The palpation of the abdomen revealed no pathologic finding. Moreover, clinical examination revealed the presence of an abscess in the right inguino-femoral region and a second one in the left thigh. Admission laboratory data showed a white blood cell count of 16300 with polymorphonucleosis (89.1%) and an hematocrit of 30.2%. His past medical history was, apart from his addiction, clear from other diseases.

Both abscesses were drained under sedation. However, despite drainage and intravenous commence of broad-spectrum antibiotic coverage, the fever persisted over the next few days. The patient underwent computed tomography of the abdomen, which showed the presence of a retroperitoneal abscess extending along the right psoas muscle and reaching the inguinal region (Figure 1). The patient was led again in the operating room, where the retroperitoneal abscess was drained through a right paramedian incision under general anesthesia. The residual cavity was irrigated and a wide drain tube was placed (Figure 2). Pseudomonas aeruginosa was grown on culture. The patient was hospitalized in the Intensive Care Unit for 46 days, where intensive antibiotic therapy was maintained and was adjusted to conform to the in vitro assay of the sensitivity of the infecting organisms and to the clinical response of the patient. Repeated CT scans were performed to continuously evaluate the post-surgical course of the abscess (Figure 3).

**Figure 1.** CT of the abdomen, showing the presence of a large retroperitoneal abscess.

**Figure 2.** Intraoperative figure, showing the drainage placed in the retroperitoneal space.

**Figure 3.** Postoperative CT of the abdomen, 23 days after the drainage of the abscess, showing complete absorption of the abscess.
Finally, the patient was discharged from our clinic after approximately three months, in good general condition. At follow-up six months after discharge the patient remains in good general health, with no signs of relapse of the retroperitoneal abscess.

**DISCUSSION**

Retroperitoneal abscesses are considered as localized areas of infection which occur in the retroperitoneal space. The retroperitoneal area is defined as the potential space between the peritoneum and the transversalis fascia lining the posterior aspect of the abdominal cavity, extending laterally to the edges of the quadratus lumbar muscles, the pelvic rim inferiorly and the diaphragm superiorly\(^4,5\). It includes an anterior retroperitoneal space, containing parts of the colon, duodenum and pancreas, and a posterior space, in which kidneys, aorta and inferior vena cava are traversed. The latter is further divided into the two lateral fossas or perinephric spaces. The area is open inferiorly, but closed superiorly, favouring the spread of infection inferiorly to the pelvis and thighs and bilaterally. Retrofascial abscesses occur within the retrofascial space, behind the transversalis fascia till the posterior parietal wall, not being retroperitoneal, strictly speaking\(^6\).

Despite modern antibiotics and intensive care, mortality from serious intra-abdominal or retroperitoneal infection remains high (5 to 50%) and morbidity is substantial\(^7\). If adequate drainage and effective antibiotics are not employed promptly, multi-organ failure syndrome may ensue and cause the death of the patient even after the primary focus of the infection has been controlled\(^8\).

Retroperitoneal abscesses are usually secondary complicating perforation of adjacent bowels arising from neoplastic disease\(^9\), diverticulitis, retroperitoneal appendicitis, pancreatitis, pancreatic cancer, biliary tract disease and rupture by stents, sphincterotomy-related perforation\(^10\), peptic ulcer disease, inflammatory bowel disease\(^11\), genitourinary extravasation secondary to obstruction, osteomyelitis of vertebral bodies or 12\(^{th}\) rib\(^1\). Less common causes include trauma, iliac lymphadenitis, acupuncture\(^3\), hematogenous or lymphatic seeding from a distant infection and post-operative complication\(^12\). In our case, the source of the patient’s abscess was probably the hematogenous seeding from the inguinoofemoral region, or the extension of the infection per continuitatum from the soft tissues of the inguinal region, through the femoral ring in the retroperitoneal space. It seems that the drained abscess in the right inguinoofemoral region, which was undertaken under sedation the day of presentation of the patient, was only the tip of the iceberg, which revealed itself during the next days.

In the vast majority of primary retroperitoneal abscesses, when no underlying source of infection is present, the usual causative agent is Staphylococcus aureus (75-90%); other organisms, such as Streptococcus, E. coli, Proteus mirabilis, Brucella spp., Pseudomonas spp. and Pasteurella multocida may rarely be responsible\(^6\). On the other hand, enteric bacteria account for up to 78% of secondary abscesses, which may arise from gastrointestinal disease, most commonly Crohn’s disease, or from the renal tract and the pancreas\(^13\).

Surgical drainage through a transperitoneal open (laparotomy) approach is undoubtedly of primary importance in the treatment of retroperitoneal abscesses as regards to “source control”\(^14\). The quicker the presence of the abscess and its exact localization is confirmed, the better for the initiation of the surgical drainage of it. Retroperitoneal abscesses pose hazards to large blood vessels and the ureters as well as to the pancreas and kidneys. Percutaneous drainage guided by CT or ultrasonography has proved to be an effective therapeutic tool that on the one hand reduces the need for surgery in selected patients\(^2\) and on the other delays surgery since it decompresses, evacuates and provides continuous abscess drainage without disseminating the infection\(^14,15,16,17\).

Retroperitoneal abscesses are a relatively rare condition and is often misdiagnosed or suspected late in its clinical course. It is a serious surgical infection associated with significant morbidity rates and long periods of hospitalization, both of which raise the economic cost in money and supporting personnel in significant heights. The problem takes new moral dimensions when the patient is a drug addict, who will probably return to his/her living hell, despite the life-threatening situation he/she had just been through. Early diagnosis and treatment decreases the morbidity and mortality markedly. An appreciation of the condition and its likely etiologic factors should improve awareness and possibly reduce mortality rates by early surgical drainage.
ΠΕΡΙΛΗΨΗ: Περιγράφεται αναπτυξιακή περίπτωση απόστημα οπισθοπεριτοναϊκού χώρου σε χρήστη ναρκωτικών ουσιών μετά από πεταλούδα ενδοφλέβιας τεταγμένης στη μηριαία φλέβα. Πρόκειται για ασθενή ηλικίας 22 ετών, ο οποίος προσήλθε στην κλινική σε ημέρα γενικής εφημερίας με υψηλό πυρετό (40°C) από 48 ώρες. Ο ασθενής ανέφερε ότι ήταν ατόμο εξαρτημένο από ναρκωτικές ουσίες και ότι έκανε τακτικά και δυο μηριαίες ενέσεις μορφίνης στις δύο μηριαίες φλέβες. Κατά την κλινική εξέταση διαπιστώθηκε η ύπαρξη μεθενεσιακού αποστήματος στην περιοχή της δεξιάς μηροβουβωνικής χώρας, καθώς και ενός δευτέρου στον αριστερό μηρό. Υπό μέθη γίνεται διάνοιξη και παροχέτευση των δύο αποστημάτων. Ωστόσο, παρά την ευρεία παροχέτευση ο πυρετός δεν υποχώρησε με αποτέλεσμα να πραγματοποιηθεί αξονική τομογραφία θώρακος και κοιλίας την 3η μετεγχειρητική ημέρα, κατά την οποία διαπιστώθηκε η ύπαρξη μεθενεσιακού αποστήματος δεξιά, εκτεινόμενο κατά μήκος του μείζονα ψίστη, έως τη βούβωνική χώρα. Ο ασθενής οδηγήθηκε εκ νέου στο χειρουργείο, όπου υπό γενική αναισθησία και με δεξιά παράμεση τομή προσεγγίστηκε το οπισθοπεριτοναϊκό απόστημα, το οποίο και παροχετεύτηκε. Ακολούθησε η έκπλυση της αποστηματικής κοιλότητας και η τοποθέτηση ευρέος παροχετευτικού σωλήνα. Από τις καλλιέργειες που λήφθηκαν απομονώθηκε στέλεχος ψευδομονάδας. Ο ασθενής οδηγήθηκε διασωληνωμένος στη Μονάδα Εντατικής Θεραπείας, όπου και παρέμεινε επί 46 ημερών. Μετά από συνολική νοσηλεία περίπου τριών μηνών, ο ασθενής εξήλθε από την κλινική σε καλή γενική κατάσταση.

Συμπεράνεται ότι η επέκταση μεθενεσιακών αποστημάτων του ριζομηρίου στον οπισθοπεριτοναϊκό χώρο είναι μία σπάνια αλλά εξαιρετικά επικίνδυνη για τη ζωή του ασθενούς κατάσταση, η οποία θα πρέπει να διαγιγνώσκεται και να αντιμετωπίζεται εγκαίρως.

Λέξεις Κλειδιά: Οπισθοπεριτοναϊκό απόστημα, Ναρκωτικές ουσίες.

REFERENCES