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Case Report

Laparoscopic approach of excision of anterior abdominal wall actinomycosis

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ABSTRACT

Actinomycosis of the abdominal wall is a rare disease. While most of the reported cases are women, we present a 42-year-old male with an abdominal mass for 4 months. Clinical examination of the abdomen revealed a well circumscribed mass in the left iliac fossa. CT abdomen showed an anterior abdominal wall mass with infiltration to the sigmoid colon however colonoscopy ruled out intraluminal origin. In contrast to traditional open approach, a laparoscopic approach was done. The abdominal wall tumour and sigmoid colon was resected en- bloc and continuity restored extra- corporeally through a small incision. Histopathology of the specimen reported an abdominal wall actinomycosis and patient was discharged with antibiotics. Laparoscopic approach was successful as the tumour was small. We therefore conclude that an initial laparoscopic assessment can be advocated and a laparoscopic excision is always possible if the features are favourable.

Keywords: Actinomycosis, Abdominal wall tumour, Laparoscopic excision

INTRODUCTION

Soft tissue tumours are multifarious groups of tumours. There have a wide range of differentiation and can occur anywhere in the body.[1] Anterior abdominal wall tumours accounts for up to 30% of all soft tissue tumours.[2] Desmoid tumours (DT) are the commonest neoplasm of the all the abdominal wall.[3] Benign causes include carbuncles, abscesses and inflammatory masses. Actinomycosis is a rare infection seen primarily in women with intra- uterine contraceptive devices (IUCD) use and its presentation as an anterior wall mass is even rarer.

CASE REPORT

A 42-year-old male was referred to us with a left iliac fossa mass. He had been harbouring the mass for 4 months and experienced mild dull aching pain. Apart from the growing concerns of an enlarging mass and the occasional pain he was otherwise well. CT scan revealed an anterior abdominal tumour with infiltration to the sigmoid colon (Figure 1).

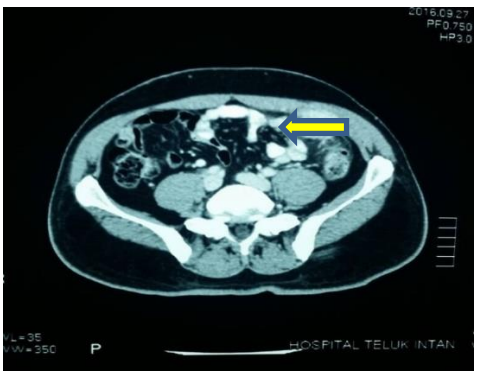

Figure 1: CT Scan showing the anterior abdominal tumour (yellow arrow).

He was then subjected to a colonoscopy that revealed nothing more than an external compression in the sigmoid colon. The patient was then planned for a laparoscopic assessment and excision.

Figure 2: Anterior abdominal tumour with sigmoid colon.

The patient was placed in a Lloyd- Davies position with the laparoscopic tower placed at the region of the patient's left leg. An optical 12 mm bladeless trocar was inserted supraumbilically. Under direct vision, a 10 mm port inserted in the McBurney's point and a 5 mm port in the right lumbar region approximately one hands breadth away from the 10 mm working port. An elliptical tumour measuring approximately 5×5 mm was seen in the left iliac fossa. The central part of the tumour was found to be adhered to the sigmoid colon. Dissection was commenced using ultrasonic shears with a 2 cm margin around the tumour.

The tumor excision was initiated from the peritoneum and worked our way towards the muscle layers of the abdominal wall. The tumour was seen involving transversus abdominis, internal oblique muscle however sparing the external oblique muscle and aponeurosis. This was followed by laparoscopic left hemicolon mobilization. A small 5cm midline incision was made and the tumour with sigmoid colon was delivered (Figure 2). A segmental resection of the sigmoid colon with the attached abdominal wall "tumour" was done and colonic continuity restored extracorporeally. All the incisions were suture using standard technique in 2 layers.

Subsequent review in the surgical clinic found the patient to be well with a well healed scar. Histopathological examinations of the resected specimen revealed an abdominal wall actinomycosis. There was no malignancy noted in the specimen. A multidisciplinary team discussion was carried out and he was then put on oral antibiotics.

DISCUSSION

Actinomycosis is a rare infection resulting in chronic abscess formation anywhere in the body. It is caused by *Actinomyces Israelii*; a gram positive, non- sporing, filamentous bacteria.[4] It is a commensal of the human oropharyngeal, gastrointestinal and urogenital tract. There are many species of actinomyces and Israelii species accounts for 70% of all human infections. Cervicofacial infections are the commonest followed by genitourinary and respiratory infections.[4]

Abdominopelvic presentation almost always follows a genitourinary infection. It can present as abscesses in the pelvis or abdominal wall, actinomycosis of the bladder or testes or even as a pelvic fistula.[5] It is mostly a local disease and is not known to spread via lymphatics or blood. Most of these infections are seen in women. Actinomyces are normal colonizer of the genitourinary tract and manipulation or instrumentation in these organs or tract accentuates migration and infection. Most of the actinoycosis in women occur in those with intrauterine contraceptive device (IUCD) use. While most cases report actinomycosis occurring in female patients with IUCD use, our patient is a male subject where his wife was found have an IUCD. Through our literature search we believe this is the first case with a peculiar presentation such as this. There are reported cases of actinomycosis following laparoscopic cholecystectomy.[5] Possible causes of this occurrence include contamination of gallbladder contents to the peritoneal cavity or port site. Clinical symptoms run an indolent course and only a small number of patients presents with acute symptoms.

Abdominal presentation of actinomycosis constitutes approximately 20% of all actinomycosis infections. Abdominal wall actinomycosis usually presents as a slow growing mass per abdomen. It has every characteristic resembling a tumour which makes diagnosis of actinomycosis extremely challenging and is usually made through histopathology. A primary CT scan is mandatory for various reasons particularly in planning the operative strategy. Other adjuncts to a CT scan largely depend on the findings encountered. The findings obtained from the CT report of our patient indicated possibility of bowel origin hence a colonoscopy was performed.

A traditional open approach is usually advocated for these tumours.[7] Minimal access approach should be considered whenever possible due to its beneficial effects.[6,8] There are several factors to be considered prior to embarking on a laparoscopic approach. Among the few are size of the tumour, location and invasion to underlying organs and involvement of the overlying rectus aponeurosis. Trocar placement varies according to the site of the tumour. As the tumour is in the anterior aspect, basic triangulation and adequate patient tilt should overcome these difficulties. The tumour was located in the left iliac fossa in our patient hence trocars placed in the supraumbilical region, Mc Burney's point and

suprapubic region provided adequate exposure and ergonomics. Dissection is best done using energy device as it produces clean bloodless dissection. A circumferential excision was carried out with relative ease in our case. The tumour was adhered superficially to the mobile sigmoid colon and did not involve the overlying external oblique aponeurosis. An anteriorly located tumour may pose challenges in performing a circumferential excision hence the "marionette technique" can be used to overcome these difficulties.[7,9] There was no involvement of the overlying aponeurosis in our patient hence no repair of the abdominal wall done. In cases where significant amount of abdominal wall is removed or aponeurotic involvement is large, mesh placement may be required to prevent hernia in the future.[10]

Actinomycotic infections require long term antibiotics up to 6 months. Patients usually respond to oral penicillin, tetracycline, erythromycin, doxycycline and clavulanic acid. A combination therapy of both surgical excisions followed by antibiotics provides better outcome compared to single therapy.[10]

CONCLUSION

The use of laparoscopy in our case proves that laparoscopic surgery is possible for excision of anterior abdominal wall lesions. Proper case selection and planning is important in obtaining successful outcomes.

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REFERENCES

1. Stojadinovic A, Hoos A, Karpoff HM, Leung DH, Antonescu CR, Brennan MF, et al. Soft tissue tumors of the abdominal wall: analysis of disease patterns and treatment. Arch Surg. 2001;136(1):70-9.
2. Vilanova JC. WHO classification of soft tissue tumors. In: Vanhoenacker FM, Parizel PM, Gielen JL, eds. Imaging of Soft Tissue Tumors. Cham, Switzerlan: Springer. 2017:187-96.
3. Zeng WG, Zhou ZX, Liang JW. Prognostic factors for desmoid tumor: A surgical series of 233 patients at a single institution. Tumour Biol. 2014;35:7513-21.
4. Rojas Perez- Ezquerra B, Guardia- Dodorico L, Arribas- Marco T, Ania- Lahuerta A, Gonzalez Ballano I, Chipana Salinas M, et al. Actinomicosis de pared abdominal. A proposito de un case. Cir Cir, 2015;83:141-5.
5. James A. Tankel, Shashank V. Gurjar, Nicholas C. Holford, Sian Williams. Abdominal actinomycosis after laparoscopic cholecystectomy: an uncommon presentation of an uncommon problem. Oxford Medic Case Rep. 2015;2:185–7.
6. Acquaro P, Tagliabue F, Confalonieri G, Faccioli P, Costa M. Abdominal wall actinomycosis stimulating a malignant neoplasm: Case report and review of the literature. World J Gastrointest Surg. 2010;2(7):247-50.
7. Meshikhes AW, Al-Zahrani H, Ewies T. Laparoscopic excision of abdominal wall desmoid tumor. As J Endoscop Surg. 2016;9(1):79-82.
8. Hayashi M, Asakuma M, Tsunemi S, Inoue Y, Shimizu T, Komeda K, et al. Surgical treatment for abdominal actinomycosis: a report of two cases. World J Gastrointest Surg. 2010;2(12):405.
9. La Greca G, Randazzo V,Barbagallo F. Laparoscopic resection of an abdominal wall desmoid using a modified suture traction technique. The 'marionette trick'. Surg Endosc. 2003;17:2029-30.
10. Carkman S, Ozben V, Durak H, Karabulut K, Ipek T. Isolated Abdominal Wall Actinomycosis Associated with an Intrauterine Contraceptive Device: A Case Report and Review of the Relevant Literature. Case Rep Med. 2010;340109.

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