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Huge infra renal abdominal aortic aneurysm presented with concomitant diverticular abscess: A case report



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ABSTRACT

INTRODUCTION: It is a controversial and difficult problem for a surgeon to manage the simultaneously occurring diseases diverticular abscess and abdominal aortic aneurysm. Mostly surgeons are not willing to execute a non vascular procedures during the repair of an aneurysm because there can be a risk of graft infection.

PRESENTATION OF CASE: In this case study, we have explained about the presentation of a huge infrarenal abdominal aortic aneurysm (AAA) that is found to be associated with a diverticular abscess and both needed an intervention.

DISCUSSION: It has been suggested by various evidences that a one-stage elective surgical treatment is safer and cost effective for the treatment of patients with an abdominal aortic aneurysm associated with other problems like gastro-intestinal malignancies. However, the high risk of graft infection made the two staged procedure a popular option.

CONCLUSION: The major dilemma is in the management of patients with large aneurysm which require an urgent repair and presented with concomitant pathologies that carry a high risk of sepsis. In this case report, we described an unusual presentation of a large aneurysm with a concomitant diverticular abscess where both needed an urgent intervention.

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1. Introduction

It is a controversial and difficult problem for surgeons to manage a simultaneously occurring intraabdominal pathologies and abdominal aortic aneurysm. It is not apparent that which pathology should be treated first or they both should be treated at the same time. It is a controversial and difficult problem for a surgeon to manage the simultaneously occurring diseases diverticular abscess and abdominal aortic aneurysm. It is not apparent that which pathology should be treated first or they both should be treated at the same time. Many of the physicians have agreed that the symptomatic lesions should be provided priority and they should be treated first. The treatment of abdominal aortic aneurysms can increase the complications risk and the pathology progression of disease that is cancer.¹ It is further indicated that concurrent elective cholecystectomy, nephrectomy and oophorectomy can be carried during the repair of abdominal aortic aneurysms and also do not causes an increase in the risk of graft rejection.²

In these types of cases, it is necessary to prevent the infections of graft and it can be ensured by the operation of AAA. The operation is carried by closing the posterior peritoneum and aneurysmal sac.³ In addition, it is necessary to consider the endovascular aneurysm repair because it provides benefits to those patients who are suffering from associated intra-abdominal diseases.⁴ This issue becomes more apparent in the situations of emergency because there is a possibility of sepsis. It is connected with an increased risk of rupture of AAA because of its size. In both of these conditions, there is an urgent need of operation.⁵ In the following case report, the abnormal presentation of a huge AAA associated with a diverticular abscess requires the surgical treatment and there are not any similar cases in literature.

2. Case report

A 71 years old male was presented with 4 days history of an abdominal pain that was increased by movement and eating. The pain was found to be relieved by rest and analgesia associated with nausea and vomiting. The patient was a known case of diabetes mellitus and hypertension. He was a heavy smoker who smoked about 25 cigarettes a day. At the time of examination he was fully conscious, oriented, afebrile, and not pale or jaundice vital sign were stable. The abdomen was soft, lax, with marked tenderness at right iliac fossa with pulsating mass at the epigastric area. His blood tests

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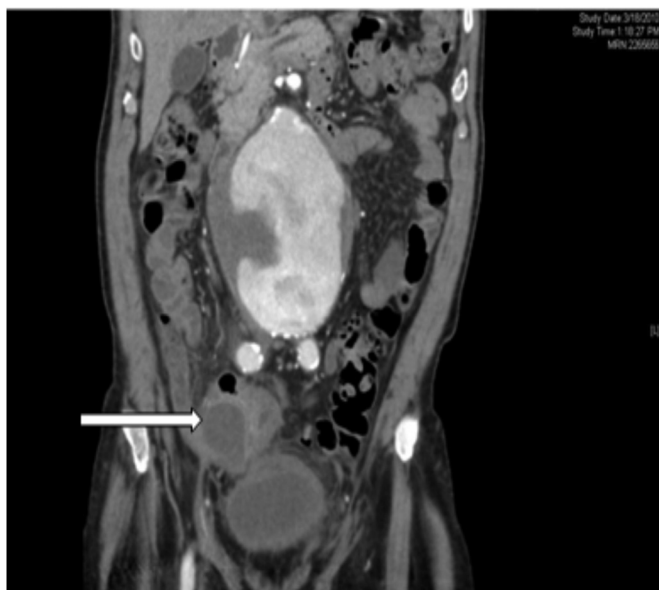


Fig. 1. CT scan showing the abdominal aortic aneurysm and the diverticular abscess (arrow).

showed WBC (8.4) and normal Hb (123) and other parameters. After performing the abdominal ultrasound it showed huge infra renal abdominal aortic aneurysm (10 cm × 10 cm) with mural thrombus and right iliac fossa collection 3 × 3, 5 cm most likely a diverticular abscess.

Fig. 1 shows the CT scan at presentation. The arrow pointing to the diverticular abscess. Because of the risks of graft infection and the complicated nature of presentation, the decision was taken to conduct a two staged procedure.

Percutaneous drainage of the abscess under ultrasound guidance was performed. Pus was sent for culture and sensitivity. In the same time the patient was put on empiric antibiotic therapy pending pus cultures. The patient was admitted to close observation unit. After culture results the patient was put on antibiotics accordingly. Ten days after the drainage and few days after minimal pus drainage a follow up CT showed complete resolution of the abscess (Fig. 2).

The drain was removed and the next day an elective abdominal aortic aneurysm repair was performed through standard midline tranperitoneal approach. The aneurysm was approached with minimal manipulation of the bowel. Size 20 mm tube Dacron graft was used for the repair. The aneurysm wall was closed over the graft and no drains were inserted.

The post operation recovery was successful and the patient was discharged after 10 days. The patient was asked to visit the outpatient clinic for the follow up after one, three and six months. At the time of making this report, the patient was followed for three years after the repair. The patient is completely fine and alive.

3. Discussion

According to the literature, the patients who are suffering from intra-abdominal surgical pathology along with the abdominal aortic aneurysm are increasing and their surgical strategies are still controversial. There are not any studies that focus on the management of huge abdominal aortic aneurysm that needs urgent repairing and the one which is presented with the associated pathologies with an increase risk of sepsis. In many of the situations, the concurrent operations should not be carried because there can be a risk of graft infection and the life threatening condition should be given priority. The second pathology should also be handled as soon as

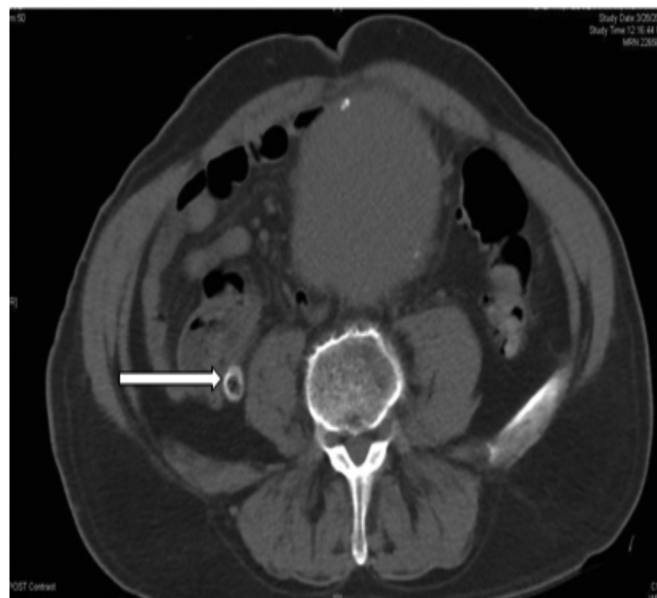


Fig. 2. CT scan 10 days after the percutaneous abscess drainage showing resolution of abscess and the drain (arrow).

possible and in the same period of admission.⁶ The condition of an abdominal pathology among with the abdominal aortic aneurysm is found to be contentious and it is not cleared that which condition should be treated first or both should be treated same time.⁷

The problem of abscesses takes place in those 16% of the patients who are suffering from diverticulitis. Moreover, it is also present in 30–50% of those patients who are in need of surgery for the condition of diverticulitis. Before the development of the radiologic techniques for intervention, there were operative interventions for the treatment of the condition and that process was a two stage process. The percutaneous drainage has provided a single step of surgery in more than half of the patients. It has also been revealed from the studies that the drainage by catheter can also provide relief in the disease symptoms.⁸ The process of drainage is carried by the anterior abdominal wall as the abscesses are present in the pelvis or sometimes they are hidden by other organs.

Up till now, almost all of the abscesses are found to have complicated diverticulitis and the surgery is recommended after the occurrence of resolution. In addition, there has been continuous improvement in the CT technology by the help of which very small abscesses can be identified. There are some abscesses which are not more than 3 cm but they are not amended in such a way that they can be drained.⁹

According to a retrospective study that included 22 patients and they also had 23 diverticular abscesses and their diameter was found to be 3 cm, all of the acute episodes of the disease were treated with the help of antibiotics.¹⁰ With the help of follow up, it was shown that 36% of the patients needed the eventual surgery and 41% indicated the complete resolution of the symptoms. The 23% of the patients were those who had persistent or mild symptoms of disease that did not require surgery.

Those patients were provided the treatment by the help of percutaneous drainage that is guided by CT, and they are required to undergo the surgical procedures if the drainage is not able to control the symptoms up till three or five days. Those patients who are successfully treated by the help of percutaneous drainage undergo the process of clinical evaluation in order to identify the risks. In case of increased risks of a patient he is recommended to have the operative intervention.¹¹

In patients with concomitant colorectal cancer and AAA, the symptomatic lesion should be a treatment priority.¹² Although EVAR results in early recovery and a shorter convalescence compared with open aneurysm orrhaphy, this modality is not suitable for our case because the anatomy of the aneurysm.^{13,14} Our patient has diverticular disease of the sigmoid with abscess which was localized and no contamination of the peritoneal cavity and we did aspiration of it and close observation of the patient and control of blood pressure. Then open repair of the aneurysm was done using a Dacron tube graft as there was no contamination of the peritoneal cavity.

After the completion of treatment the patient was also further provided with several recommendations. Those patients who suffer from diverticular disease are further advised to not to take the fibre whole pieces that include nuts, corns and seeds. It is further indicated that there is an inverse relation between the risks of development of diverticulitis, bleeding and the consumption of popcorn.¹⁵

4. Conclusion

The management of concurrently occurring abdominal aortic aneurysm and another intra-abdominal pathology is controversial and represents a difficult management problem for the surgeon. The major dilemma is in the management of patients with large aneurysm which require an urgent repair and presented with concomitant pathologies that carry a high risk of sepsis. In this case report, we described an unusual presentation of a large aneurysm with concomitant diverticular abscess where both needed an urgent surgical intervention.

Conflict of interest

We declare no conflict of interest and no financial disclosure.

Funding

We declare no funding of our research.

Ethical approval

The concerned patient was consented to publish his case.

Author contributions

A.M. Al Wahbi is the main author who contributed in study design, data analysis, writing, editing, and submitting of the manuscript. M. Al Tamimi is the coauthor who also contributed in data collection, literature search, and writing.

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