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Short Running Title: A case report of combined acute cholecystitis and appendicitis

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TITLE: Acute cholecystitis with perforated appendicitis: The first reported case

ABSTRACT

Introduction
Although both conditions are very common, concomitance of acute calculous cholecystitis with perforated acute has never been reported. In this paper, we present a case of acute calculous cholecystitis with perforated acute appendicitis.

Case Report
A 66-year-old female presented with 4 day history of right side abdominal pain associated with nausea, pyrexia and tachycardia (PR 105 beats per minute). An ultrasound of her abdomen and pelvis revealed an inflamed, thick-walled gallbladder with evidence of multiple small gallstones. Her appendix could not be visualized. A diagnostic +/- therapeutic laparoscopy was performed, which revealed an inflamed gallbladder and fluid collection in right iliac fossa with foul smelling. A combined laparoscopic cholecystectomy with open appendectomy was performed. Intraoperatively perforated appendix was found. Post-operative follow up was uneventful and the patient was free of complaint 2 weeks later.

Conclusion
While most of the abdominal pain refers to single diagnosis, clinicians should be aware that more than one diagnosis can still coexist.

Keywords: acute cholecystitis. Appendicitis. Dual abdominal pathology
TITLE: Acute cholecystitis with perforated appendicitis: The first reported case

INTRODUCTION
Acute calculous cholecystitis (ACC) is the most common surgical diagnosis in developed countries and its incidence increases with age [1]. Worldwide, it is accounted as a third most common surgical emergency admission [2]. Acute appendicitis (AA) is another most common cause of emergency admission with approximately 11 in 10,000 people will develop appendicitis throughout their lifetime [3]. Although literature shows decreasing incidence of AA, papers revealed increased fatal complications of this conditions including perforation and septicemia [4].

In spite of the fact that both conditions are common, simultaneous occurrence of these diseases are extremely rare with only 4 reported cases in literature [5, 6, 7, 8]. Concomitance of ACC with perforated AA has never been reported. In this paper, we present a case of ACC with perforated AA managed by combined laparoscopy and open appendectomy.

CASE REPORT
A 66-year-old female presented with 4 day history of right side abdominal pain associated with nausea. The pain started gradually from epigasteric region and increased in severity in last 10 hours. On physical examination, she had a tachycardia (PR 105 beats per minute) with normal blood pressure but she was pyrexic (38.4°C). Abdominal examination showed tenderness in right sides of abdomen including right iliac fossa. Murphy sign was +ve. Obturator, rovsing and psoas signs were negative. Laboratory tests showed normal WBC and liver function tests.

An ultrasound of her abdomen and pelvis revealed an inflamed, thick-walled gallbladder with evidence of multiple small gallstones. Her appendix could not be visualized and there was no free fluid in the pelvis. A diagnostic +/- therapeutic laparoscopy was performed, which revealed an inflamed gallbladder and fluid collection in right iliac fossa with foul smelling (Figure 1). A combined laparoscopic cholecystectomy with open appendectomy was performed (Figure 2).
Intraoperatively perforated appendix was found. The sample was lost by the family before being examined histopathologically. Post-operative follow up was uneventful and the patient was free of complaint 2 weeks later.

**DISCUSSION**

Regarding acute onset of symptoms, an important principle is that combining clinical and laboratory data should fit into professional diagnosis of a condition before any sort of intervention [8]. In this case, the data were more suggestive for ACC rather than an AA as pain and tenderness was more prominent at right hypochondrium with positive Murphy’s sign and Ultrasound showed multiple small size stones and thick wall gall bladder. Simultaneous cholecystitis and appendicitis in the same patient has been rarely described in the English literature [5, 6]. It has been reported with 4 forms; an acalculous cholecystitis and appendicitis, calculous cholecystitis and appendicitis, perforated cholecystitis and appendicitis as well as during pregnancy [5, 6, 7, 8]. To our knowledge, this is the first time to present a case with ACC with perforated AA. With few reported cases, it is difficult to explain the etiology of concomitant occurrence of cholecystitis and appendicitis. As previously noted, hyperbilirubinemia can occur in acute appendicitis [5]. Hyperbilirubinemia associated with appendicitis explained by bacterial translocation into the portal venous system, leading to altered bilirubin excretion [5]. This could be an explanation for simultaneous occurrence of both ACC and AA. However, there is no evidence to support the exact etiology of this co-existence. When diagnosis of an abdominal pain is in question, or when more than one pathologies are suspected, laparoscopic abdominal examination is an ideal approach which gives opportunity for both diagnosis and management of most of the surgical problem [8]. However when difficulties are faced, timely conversion to open operation should not be delayed. In this case, after successful laparoscopic cholecystectomy has been performed, appendectomy was done in open classical way.
CONCLUSION

While most of the abdominal pain refers to single diagnosis, clinicians should be aware that more than one diagnosis can still coexist. In this situation, a diagnostic plus/minus therapeutic laparoscopy can be an ideal approach.

CONFLICT OF INTEREST

There is no conflict of interest

AUTHOR’S CONTRIBUTIONS

Abdulwahid M. Salih
Group 1- Substantial contribution to the concept and design
Group 2- Revising the article
Group 3- Final approval of the article

F.H.Kakamad
Group 1 - Substantial contribution to the concept and design
Group 2- Drafting and revising the manuscript
Group 3- Final approval of the manuscript

Marden Husain Abbas
Group 1- Substantial contribution to the concept and design, Acquisition of the data
Group 2- Revising the manuscript
Group 3- Final approval of the manuscript

REFERENCES


FIGURE LEGENDS

Figure 1: laparoscopic cholecystectomy showing inflamed and distended gall bladder.

Figure 2: open appendicectomy showing perforated appendix.
FIGURES

Figure 1: laparoscopic cholecystectomy showing inflamed and distended gall bladder.

Figure 2: open appendisectomy showing perforated appendix.