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RESEARCH ARTICLE

NON-COMPLICATED CAECAL DIVERTICULITIS SIMULATING ACUTE APPENDICITIS: A CASE REPORT

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Abstract

The diagnosis of caecal diverticulitis is often confused with that of acute appendicitis. It is an uncommon condition, accounting for 3.6% of diverticular diseases [1]. Knowledge of this pathology is important for all clinicians. Abdominal computed tomography is more effective for preoperative diagnosis. We report in this work the clinical case and the management of a case of uncomplicated cecal diverticulum, observed in the Mohammed VI University Hospital of Marrakech in a 39-year-old woman, in May 2024. The abdominal Computed tomography scan allowed the diagnosis by objectifying multiple colonic diverticula more marked at the cecal level, one of which is the seat of stercolith, with a parietal thickening of the cecum. The patient received conservative management, hospitalized in the general surgery department, treated with intravenous antibiotics followed by oral antibiotics, and monitored clinically and biologically for complications. The patient's follow-up was without complications and did not reveal any recurrence.

Introduction:-

Cecal diverticulitis is an uncommon condition, accounting for only 3.6% of all diverticulosis [1,2,3]. It is rare in North Africa and the Western world. In Asia, diverticulosis predominantly affects the right colon, with a prevalence ranging from 13% to 25% [4]. The affected population tends to be younger, with an average age between 35 and 45 years, and an equal male-to-female distribution [5,6].

Cecal diverticulitis can be congenital or acquired, solitary or multiple.

It often presents with a right iliac fossa pain syndrome, leading some clinicians to misdiagnose it as acute appendicitis. Preoperative diagnosis of cecal diverticulitis is primarily established through imaging, with abdominal computed tomography CT scans being the most effective diagnostic tool.

Some studies advocate for a conservative approach with medical treatment, as in our case, while others suggest surgical intervention, particularly for complicated forms.

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We report a case of cecal diverticulitis admitted to the emergency with clinical symptoms simulating acute appendicitis, successfully treated with conservative medical management, to emphasize the importance of preoperative diagnosis in management.

Patient and Methods:-

A 39-year-old female patient with a history of cervical cancer diagnosed in 2021, treated with hysterectomy followed by radiotherapy and adjuvant chemotherapy, presented to the emergency department with acute, intense, right iliac fossa (RIF) pain. The pain was non-radiating and associated with watery diarrhea and food-related vomiting. The pain had been constant for three days, accompanied by fever (38.5°C) and preserved general health.

Physical examination revealed a conscious, stable patient with normal vital signs. Abdominal examination showed tenderness in the right iliac fossa without guarding or rigidity, no hepatomegaly or splenomegaly. Digital rectal examination revealed normal sphincter tone without abnormalities.

Blood tests showed a total white blood cell count of 16,570/µL with neutrophilia at 11,980/µL, hemoglobin level of 14.7 g/dL, platelet count of 326,000/µL, and elevated C-reactive protein at 127 mg/L. Lipase levels were normal at 6 U/L, and other parameters were within normal ranges.

Given theright iliac fossa pain and biological inflammatory syndrome, acute appendicitis was suspected. Abdominal and pelvic ultrasound was the first imaging modality requested, revealing no normal or pathological appendix. A contrast-enhanced abdominal computed tomography (CT) scan showed a normal-sized appendiceal structure (6.4 mm maximum diameter), multiple colonic diverticula, predominantly in the cecum, with one containing a stercolith. There was circumferential mural thickening of the cecum (10 mm maximum thickness) with target-like enhancement post-contrast injection, consistent with cecal diverticulitis (Figures 1–2).

A conservative management approach was adopted. The patient was admitted to the general surgery department, with ice pack application and first-line analgesic treatment (1 g paracetamol), administered intravenously every eight hours, combined with bi-antibiotic therapy. Intravenous antibiotics included amoxicillin-clavulanic acid (1 g every eight hours) and metronidazole (500 mg every eight hours) for five days, until symptom resolution.

Clinical and biological monitoring was performed, including daily abdominal examinations and tracking the kinetics of white blood cell count and C-reactive protein levels, which normalized during hospitalization.

At discharge, intravenous bi-antibiotic therapy was transitioned to oral treatment for an additional five days: amoxicillin-clavulanic acid (875 mg/125 mg) and metronidazole (500 mg), one tablet three times daily.

The patient was followed up in our department after discharge, with no recurrence of symptoms. A colonoscopy performed eight weeks after the acute episode revealed uncomplicated diverticula in the cecum without any suspicious tumoral processes.

Discussion:-

A diverticulum is defined as the presence of protrusions through the colonic wall. Cecal diverticulitis was first reported by Potier in 1912. It is an uncommon condition, accounting for only 3.6% of all diverticulosis, with a median incidence age of 44 years and a male-to-female ratio of 3:2 [7,8]. It can be solitary or multiple, congenital (true) or acquired (false). True diverticula consist of all layers of the colonic wall, whereas false diverticula result from the herniation of the mucosa and submucosa through the muscularis propria. Most cecal diverticula arise from the anterior aspect of the cecum and are usually solitary. When inflamed, they tend to perforate and cause peritonitis. However, a posteriorly located cecal diverticulitis can mimic a cecal tumor [9].

The most common symptoms of cecal diverticulitis are right iliac fossa (RIF) pain (93.2%), nausea and/or vomiting (35.4%), and fever (26.9%) [10], often leading to a misdiagnosis of acute appendicitis. It is found in 1 out of 300 appendectomies in Western countries and in 1 out of 180 to 1 out of 40 appendectomies in Asia [8].

Several studies have highlighted factors that can help differentiate the two conditions. Some studies have shown prolonged symptom duration in cecal diverticulitis, with pain localized specifically in the right iliac fossa without

migrating to the peri-umbilical region [7,8,10], and more frequent diarrhea compared to acute appendicitis. Nausea and vomiting are less frequent in cecal diverticulitis [10,11].

The biological inflammatory syndrome, characterized by an elevated white blood cell count and C-reactive protein (CRP) levels, is useful in diagnosing acute appendicitis but is not very suggestive of cecal diverticulitis. In our case, blood tests revealed a CRP of 127 mg/L and leukocytosis at 11,980/µL. Therefore, further studies are needed to assess the validity of these markers in diagnosing cecal diverticulitis [8].

Regarding imaging, abdominal ultrasound is frequently used in emergency medicine for the initial evaluation of acute abdominal pain. With appropriate patient selection, it can diagnose the condition with a sensitivity and specificity approaching 100%. It can also be safely used in pregnant women. The current diagnostic criterion for cecal diverticulitis is the presence of a round hypoechoic or anechoic structure protruding from a thickened colonic wall, which is not compatible with appendicitis. However, diagnostic accuracy may be affected by factors such as the small size of the diverticulum, obesity, RIF tenderness, the presence of intestinal gas, and the operator's experience [12].

Abdominal CT remains the gold standard for diagnosing cecal diverticulitis. It offers numerous advantages over ultrasound, including being operator-independent and providing detailed imaging of the diverticulitis, its location, the extent of inflammation, its relationship with adjacent organs, and the presence of complications [13]. It also helps identify alternative diagnoses and provides essential information for deciding whether a conservative or surgical approach is appropriate. This imaging modality has a sensitivity and specificity of 99% for diagnosis [14]. Radiological features of cecal diverticulitis include the visualization of one or more round or oval protrusions filled with air or contrast medium, sometimes with a stercolith, surrounded by pericolonic inflammation and colonic wall thickening with persistent wall enhancement [14,15]. In our case, the diagnosis was made using CT, which showed multiple diverticula in the cecum, some containing a stercolith, and circumferential thickening of the cecal wall with contrast enhancement. However, CT cannot always differentiate cecal diverticulitis from cecal cancer in 10% of cases [15].

Recent studies using magnetic resonance imaging (MRI) show good diagnostic accuracy for cecal diverticulitis, like ultrasound, with the advantage of being non-ionizing and safe for pregnant women [16]. Whether in T1 or T2-weighted imaging, as with CT, diverticulitis appears as a low-signal herniation surrounded by a thickened colon and adjacent fat inflammation [16]. However, MRI is not commonly used due to limited availability, longer examination time, higher costs, and contraindications in patients with metal implants.

Colonoscopy is often used for diagnosing lower gastrointestinal bleeding, but it is not recommended in acute diverticulitis (whether right-sided or left-sided) due to the increased risk of perforation from air insufflation [17]. Six to eight weeks after conservative treatment for an acute episode, most guidelines recommend routine colonoscopy to rule out an underlying tumoral process [18]. However, this procedure remains debated, with some authors questioning its relevance.

Barium enema (or gastrografin enema) is used less frequently today but can be useful in diagnosing chronic cases. It can help rule out colonic stenosing diseases and map the diverticular disease. Diagnostic criteria include barium extravasation, colonic lumen stenosis, or mucosal thickening, and possible mass effect [19].

The most important aspect of managing cecal diverticulitis is establishing an accurate preoperative diagnosis. In our case, a conservative approach was initially adopted with good outcomes, in line with several studies where 70.2% of patients diagnosed radiologically received conservative treatment [10].

Conservative treatment includes broad-spectrum antibiotic therapy as the first-line approach. If clinical or radiological progression is poor, surgical intervention (appendectomy, drainage, diverticulectomy, etc.) is indicated [20].

Conclusion:-

Cecal diverticulitis can be mistaken for acute appendicitis. Abdominal CT plays an important role in preoperative diagnosis, helping to avoid unnecessary surgical explorations. The first-line management is conservative, using the intravenous antibiotic treatments described earlier.

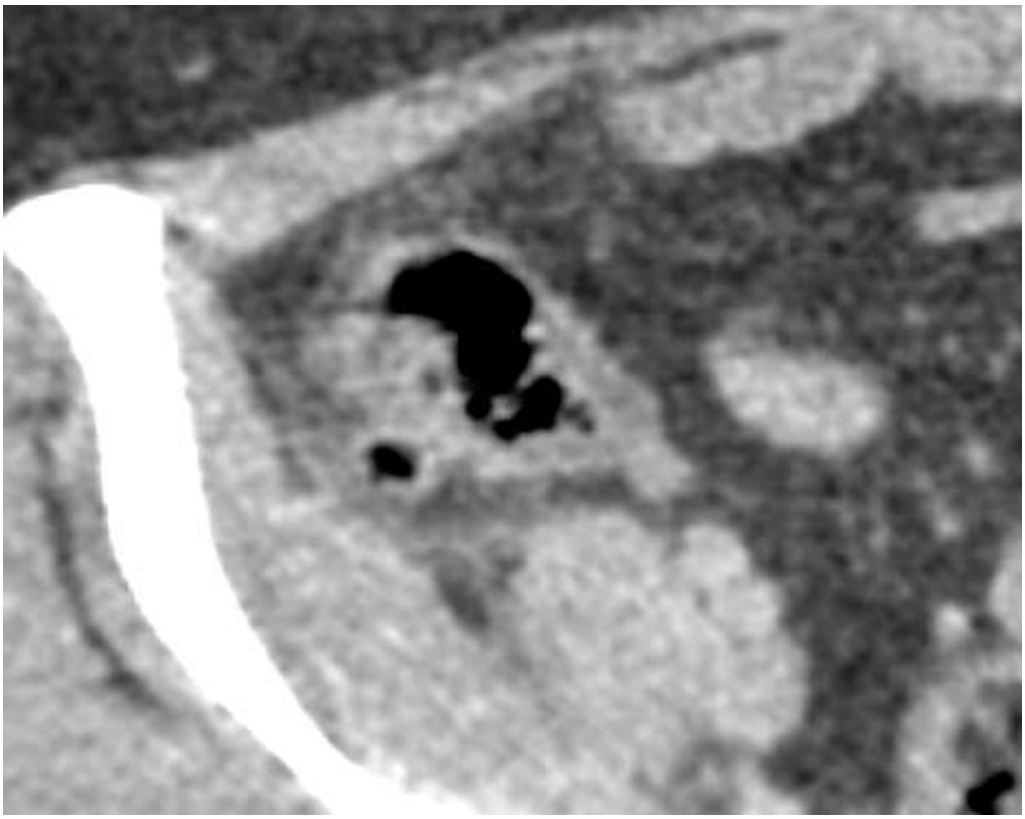

Figure 1:- Abdominal CT scan showing multiple colonic diverticula at the cecal level including with circumferential cecal wall thickening enhanced after injection of contrast product.

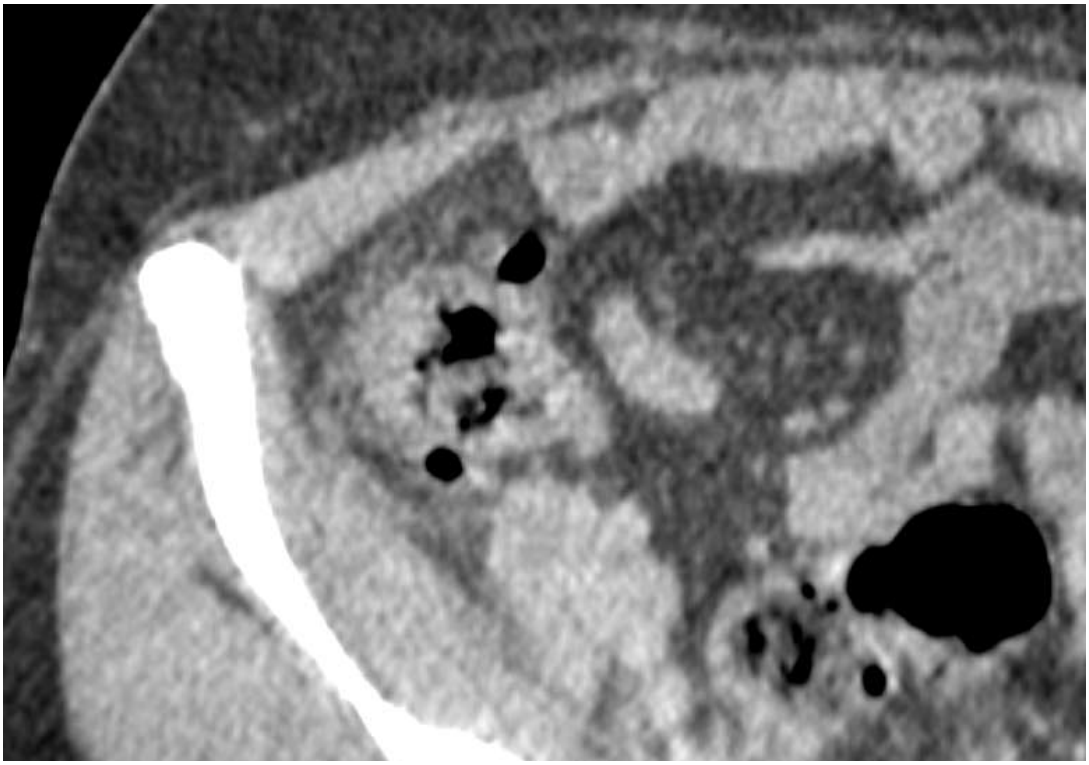

Figure 2:- Abdominal CT scan showing multiple cecal diverticula.

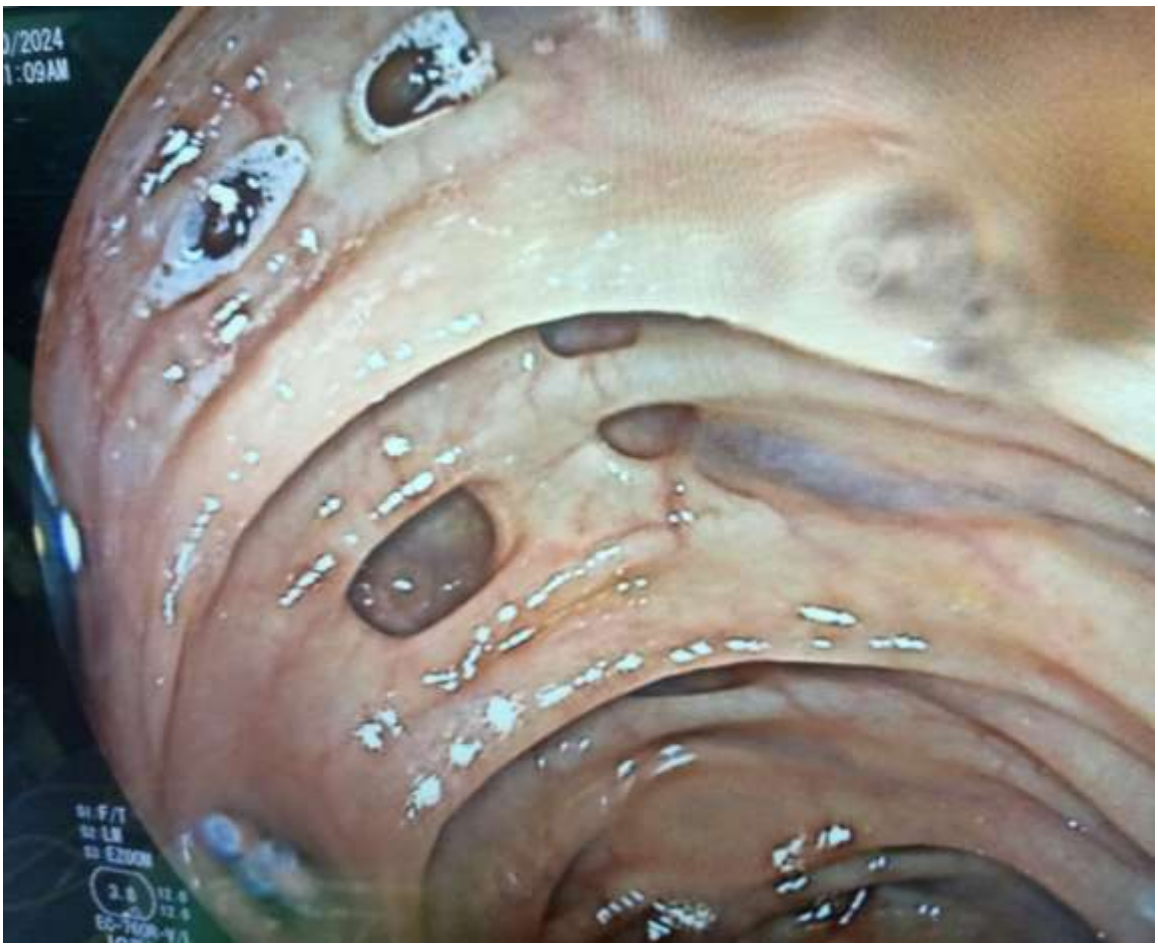

Figure 3:- Endoscopic image of right colonic diverticula during surveillance.

Conflicts of Interest

The authors declare no conflicts of interest.

All authors contributed to the conduction of this work.

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