Tubo-ovarian abscess complicating sigmoid colon diverticulitis

Clinical History:
Post-menopausal female patient without significant past medical history, complaining of persistent pelvic pain since three days with unaltered bowel habits. Found apyretic with absent peritonism at physical examination. Abnormal inflammatory laboratory markers (243 U/l C-Reactive Protein, 21.380/mmc WBC).

Imaging Findings:
During Emergency Department stay, the attending gynaecologist reported painful uterus and adnexa with suspected mass lesion at palpation and endovaginal ultrasound. Urgent contrast-enhanced CT disclosed marked sigmoid colon diverticular disease with severe mural thickening, inflammatory density of the perivisceral fat and presence of a large, predominantly fluid-containing left parauterine abscess-like collection with some internal air. Initial surgical exploration confirmed tubo-ovarian purulent abscess that was drained intraoperatively. Ten days after hospital discharge, with persisting symptoms, follow-up CT detected reappearance of a similar left adnexal abscessualisation associated with persistent signs of diverticulitis. A second surgical intervention included sigmoid resection with temporary colostomy and removal of left adnexal abscess caused by colo-salpingeal fistulisation.

Discussion:
Since diverticulosis of the large bowel is highly prevalent, diverticulitis (occurring in up to one-third of affected patients, most usually at the sigmoid) represents a common cause of acute abdominal complaints that increases frequently with advancing age. In 20% of cases, diverticulitis may be further complicated by perforation with abscess formation and fistulisation to adjacent organs, particularly the urinary bladder (in half of the cases), sometimes the vagina, uterus or small bowel [1-3]. In exceptional occurrences, as from a few reports mainly found in the gynaecological literature, diverticulitis may lead to colosalpingeal fistulisation and formation of a tubo-ovarian abscess, left-sided in the vast majority of patients [1-4]. With adnexal involvement, clinical and laboratory manifestations are unspecific and include more or less acute lower abdominal pain, variable fever, malaise and abnormal laboratory inflammatory markers, whereas genital symptoms are usually absent apart from very advanced stages. Not unusually, preoperative misdiagnosis or underestimation of primary colonic disease has led to inadequate surgical treatment [1-3]. Currently, multidetector CT represents the mainstay modality to investigate suspected diverticulitis, yielding a very high accuracy for identification of acute pericolonic fat inflammation, contained or free perforation and allowing confident identification of features (including perivisceral abscesses and extraintestinal gas collections) that indicate
high risk of failure and recurrence with conservative treatment [5, 6]. Diverticulitis complicated by colosalpingeal fistulisation requires prompt, aggressive surgical intervention with simultaneous bowel resection and salpingo-oophorectomy, with or without hysterectomy in postmenopausal women: therefore preoperative identification of this uncommon gynaecological complication, usually clinically unsuspected, is relevant [1, 2].

Correct diagnosis relies on CT imaging, although diverticulitis involvement of the female genital organs may be unclear due to an overwhelming pelvic inflammation. As in this case, the hallmark of a tubo-ovarian abscess from colosalpingeal fistulisation is represented by left adnexal enlargement in close proximity to the diseased sigmoid colon, with presence of gas (associated with 88% sensitivity and 100% specificity); a fluid-like abscess collection without gas has more limited accuracy. Conversely, the fistulous communication between the sigmoid colon and genital organs is very difficult to demonstrate directly with barium enema, endoscopy and CT [2, 3].

In conclusion, colosalpingeal fistulisation is a rare complication of sigmoid diverticulitis: detection of a left-sided tubo-ovarian gas-containing abscess should advise radiologists to suggest this diagnosis to allow correct radical surgery planning. Furthermore, association with colonic diverticulitis helps not to misdiagnose tubo-ovarian abscess as primary gynaecologic diseases or ovarian tumours [1, 3].

**Differential Diagnosis List:** Tubo-ovarian abscess from colosalpingeal fistulisation of sigmoid diverticulitis., Acute uncomplicated diverticulitis, Intestinal ischaemia, Tuberculous salpingitis, Pyogenic salpingitis, Ovarian cancer

**Final Diagnosis:** Tubo-ovarian abscess from colosalpingeal fistulisation of sigmoid diverticulitis.

**References:**


Description: Unenhanced (a) and post-contrast (b) axial images show severe sigmoid colon diverticulosis, with associated perivisceral fat inflammatory stranding and left-sided pelvic abscess-like collection containing some gas. Origin: Tonolini M, Department of Radiology, "Luigi Sacco" University Hospital – Milan (Italy)
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Description: Coronal reformatted images confirm sigmoid colon diverticulitis with perivisceral fat and fascial inflammation. Small bowel has been opacified with peroral diluted contrast. Origin: Tonolini M, Department of Radiology, "Luigi Sacco" University Hospital – Milan (Italy)
Description: Axial (b,c) and coronal reformatted (d) images document post-surgical reappearance (although somewhat smaller) of drained left adnexal abscess-like collection with predominantly fluid content and some gas bubbles. Origin: Tonolini M, Department of Radiology, “Luigi Sacco” University Hospital – Milan (Italy)
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