

Isolated Fallopian Tube Torsion (IFTT)

Differentiation Between a Common Verses a Rare Pelvic Pathology

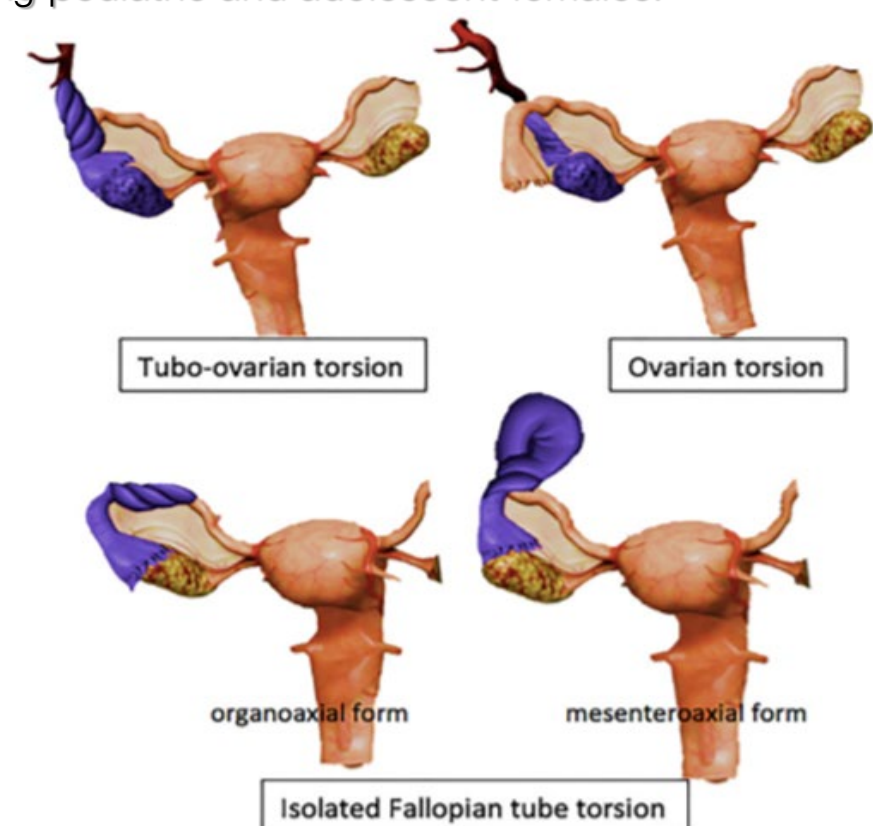
Abstract

Isolated fallopian tube torsion (IFTT) is a rare cause of pelvic pain that occurs when the fallopian tube rotates around itself, without ovarian torsion. IFTT is typically diagnosed during laparoscopic evaluation of the pelvis, where salpingectomy or de-torsing of the fallopian tube may occur. In this case study, the author reports the imaging findings of IFTT in the setting that a ruptured appendix was initially presumed.

Isolated Fallopian Tube Torsion (IFTT)

Isolated fallopian tube torsion (IFTT) is a rare cause of pelvic pain in women during their reproductive years and in young adolescent females. It has a reported incidence of 1:1.5 million and was first described by Bland-Sutton in 1890.¹ This condition is so rare, that there are only approximately 35 cases described in the literature involving pediatric and adolescent females.²

This abnormality develops when there is an isolated rotation of the fallopian tube, not involving the ovary. IFTT can further be categorized into organoaxial and mesenteroaxial forms, depending on how the tube is twisted.³ (Figure 1).



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Fig. 1 The four pathological patterns of a right adnexal torsion: tubo-ovarian torsion, ovarian torsion, and the organoaxial form and mesenteroaxial form of isolated Fallopian tube torsion

Typically, patients can present with a variety of symptoms ranging from abdominal pain that is either acute or chronic, nausea, and vomiting.⁴ Because of these symptoms, differential diagnoses frequently include acute appendicitis and/or ovarian torsion.⁴

Case Report

A 9-year old female was seen at a local hospital for pelvic pain and vomiting. After being evaluated, the patient was discharged from that facility. The next day the patient's mother brought her daughter back to the same facility, as the patient's symptoms were not improving. At that time, the patient had a non-contrast computerized tomography (CT) examination performed (due to a past reaction to contrast).

Based on the CT, it was originally thought that the patient had a ruptured appendix with fluid, or an abscess in the pelvis (Figure 2). Because of the findings, the patient was referred to a nearby children's hospital for further work-up.

At the children's hospital, the patient was noted to have leukocytosis and a fever. Due to the CT findings at the initial facility, an ultrasound of the right lower quadrant (RLQ) was ordered.

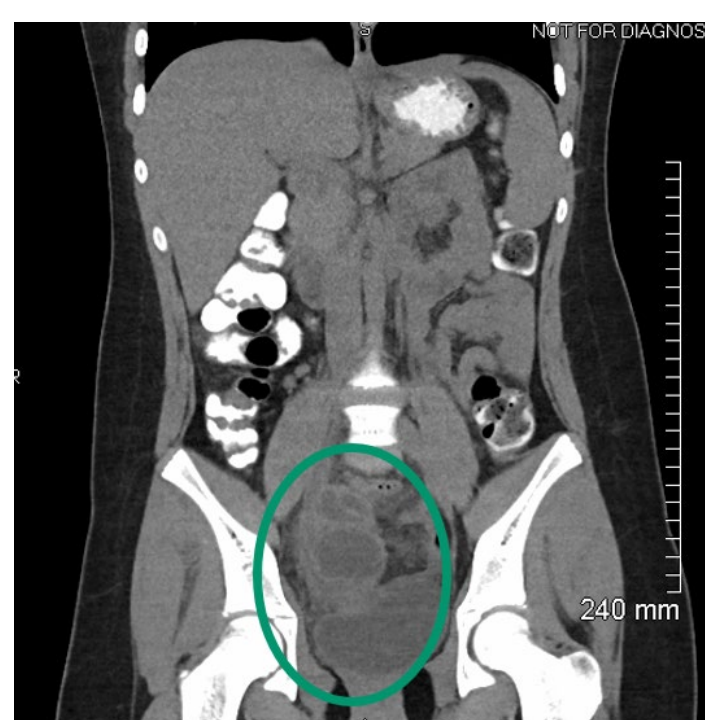


Fig. 2 Non-contrast CT coronal image of the fluid collection appreciated in the pelvis (green circled area)

Case Report (cont'd.)

The ultrasound of the RLQ revealed what appeared to be an enlarged appendix with hyperechoic fat seen surrounding the appendix (Figure 3).

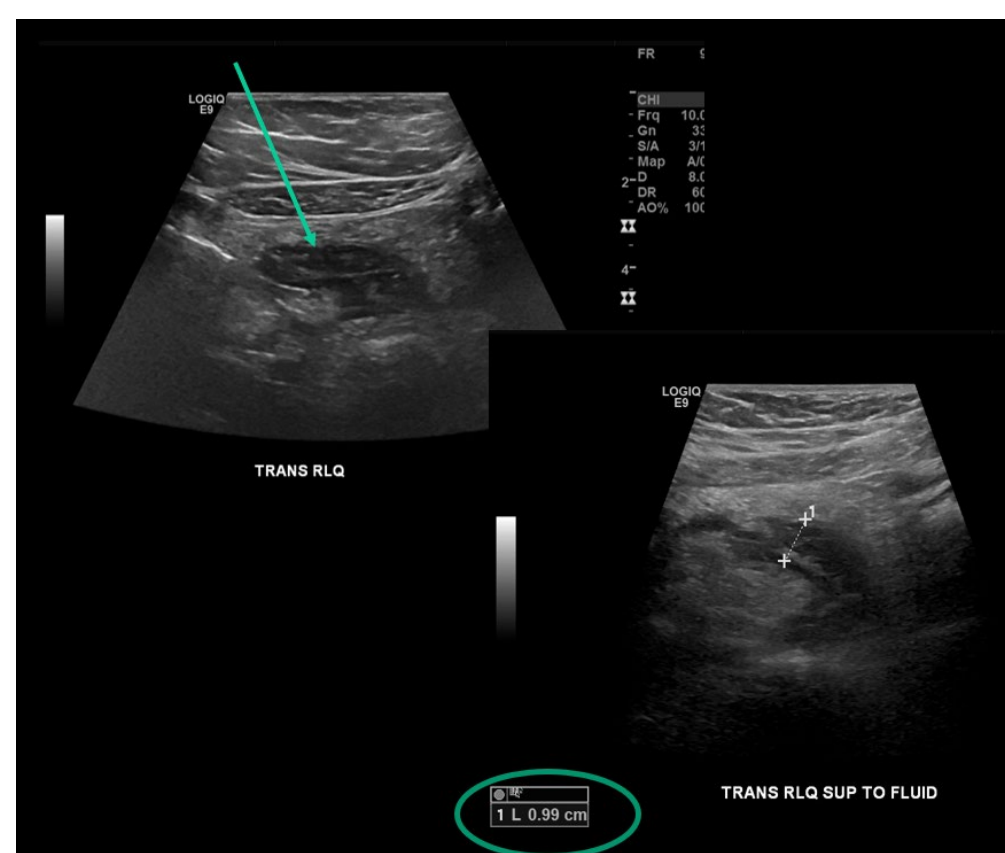


Fig. 3 Ultrasound imaging of the right lower quadrant demonstrating an enlarged appendix (arrow) surrounded by hyperechoic fat.

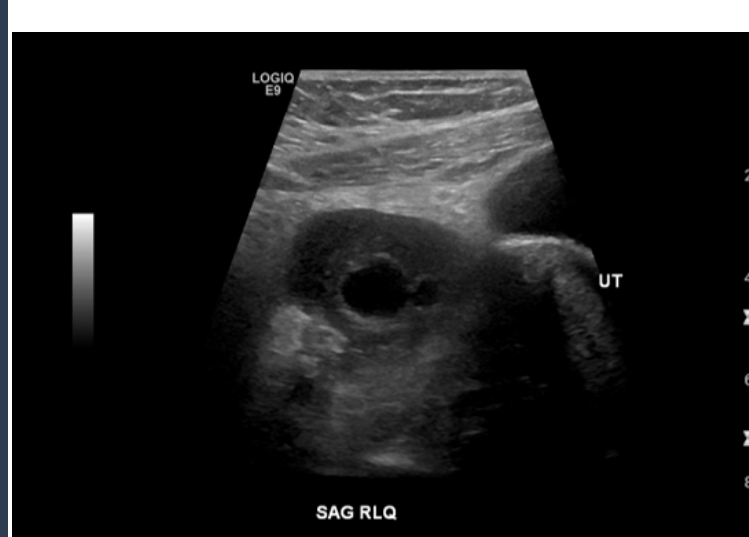


Fig. 4 Ultrasound of the RLQ revealed what appeared to be an enlarged right ovary.

While scanning the RLQ, the right ovary was appreciated. The ovary seemed larger in size for a 9-year old. Both color and spectral Doppler signals were obtained from the right ovary and demonstrated arterial and venous signals. While scanning the midline pelvis, a large fluid collection (presumably an abscess) was seen in what appeared to be the posterior cul-de-sac measuring 7.4 x 4.7 x 3.4cm (Figures 4, 5, & 6).

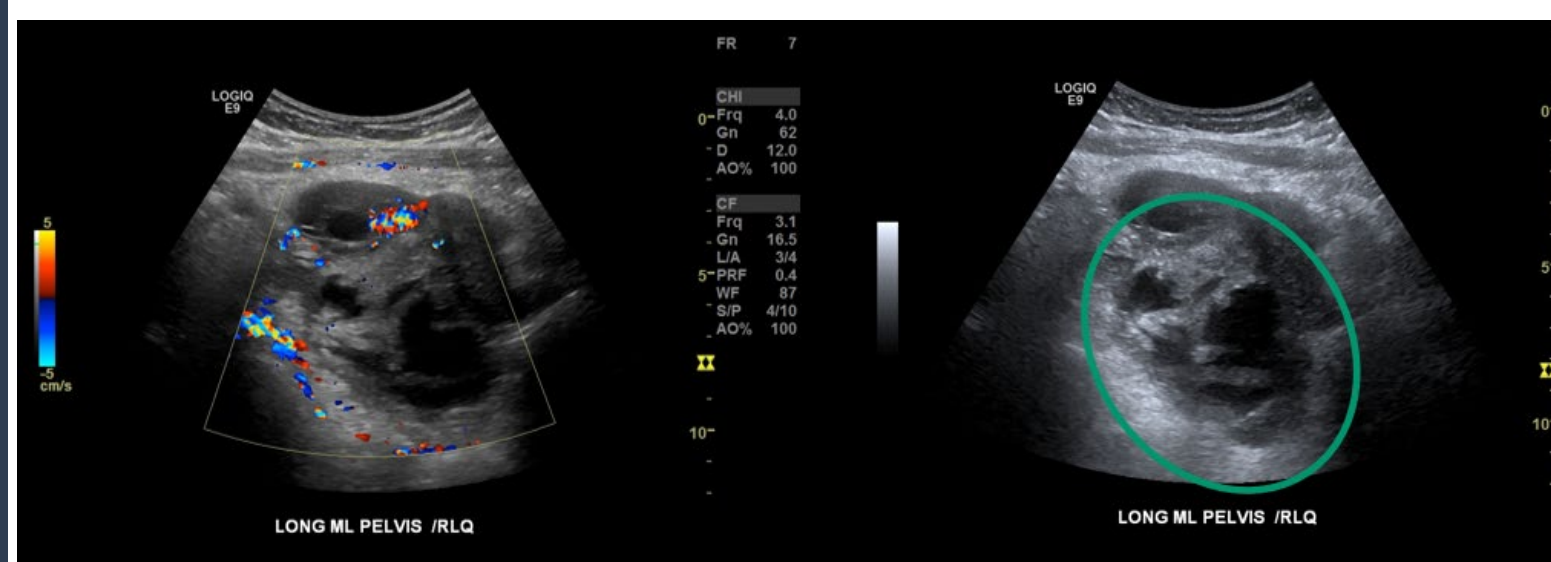


Fig. 5 Color Doppler of the right ovary revealed that blood flow was present.

Fig. 6 A complex fluid collection was appreciated in the posterior cul-de-sac (green circled area)

After reviewing all the images, the radiologist recommended a pelvic magnetic resonance imaging (MRI) examination to help further characterize the fluid collection in the pelvis. The MRI was performed and revealed a right sided hematosalpinx, enlarged right ovary, and diffuse inflammation of the tissues in the pelvis (Figure 7), concerning for a right tubo-ovarian torsion. The appendix appeared enlarged, but not inflamed and the left adnexal structures appeared normal.

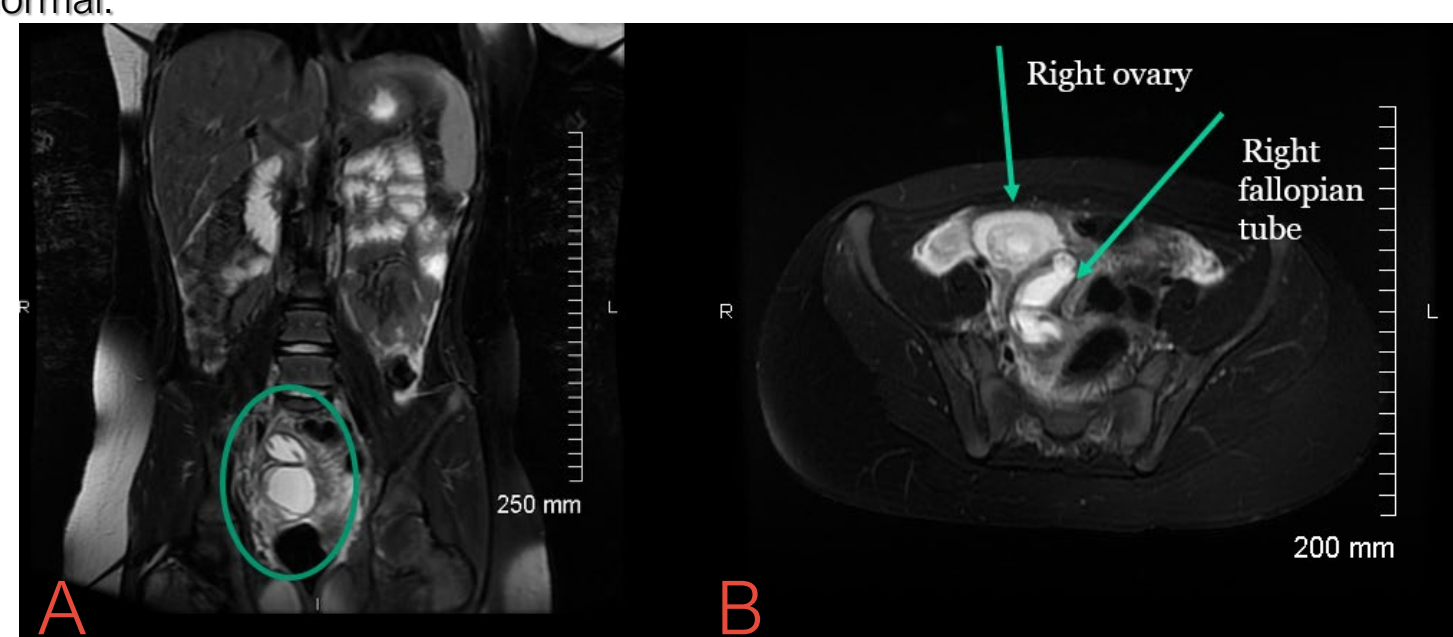


Fig. 7 Coronal (A) and axial (B) MRI images demonstrate a right hematosalpinx (green circled area and arrowed/labeled structures) and an enlarged right ovary (arrowed/labeled structure).

Case Report (cont'd.)

The patient went to the operating room (OR) for laparoscopic evaluation and treatment. In the OR, clotted blood was seen in the pelvis and evacuated (Figure 8). As the uterus was lifted, a large, dark structure was appreciated as the torsed hematosalpinx (Figure 9). The right ovary was viable, but enlarged, and was therefore bi-valved (Figure 10). The patient's right fallopian tube was de-torsed and the patient also underwent a salpingostomy to evacuate the blood in the tube. Once this was done, the fallopian tube started to pink up and seemed viable. Because of this, a salpingectomy did not need to be performed. The patient did very well following surgery and was discharged the next day.

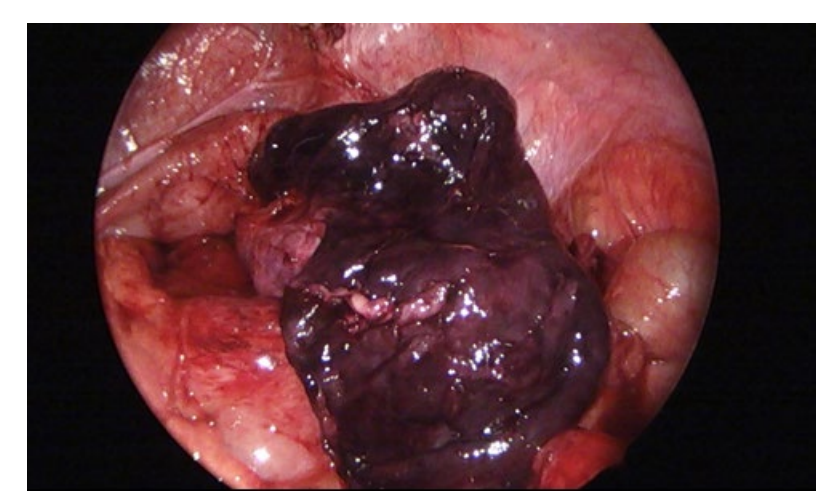


Fig. 8 Laparoscopic picture of the clotted blood seen in the pelvis.

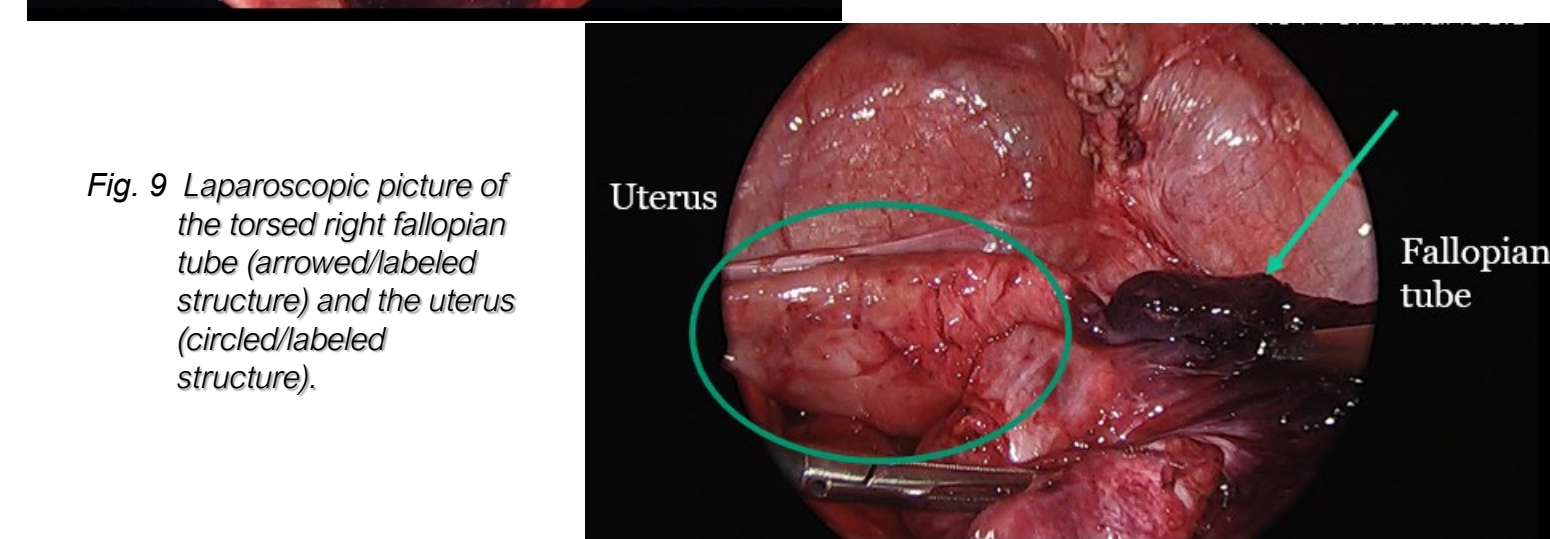


Fig. 9 Laparoscopic picture of the torsed right fallopian tube (arrowed/labeled structure) and the uterus (circled/labeled structure).

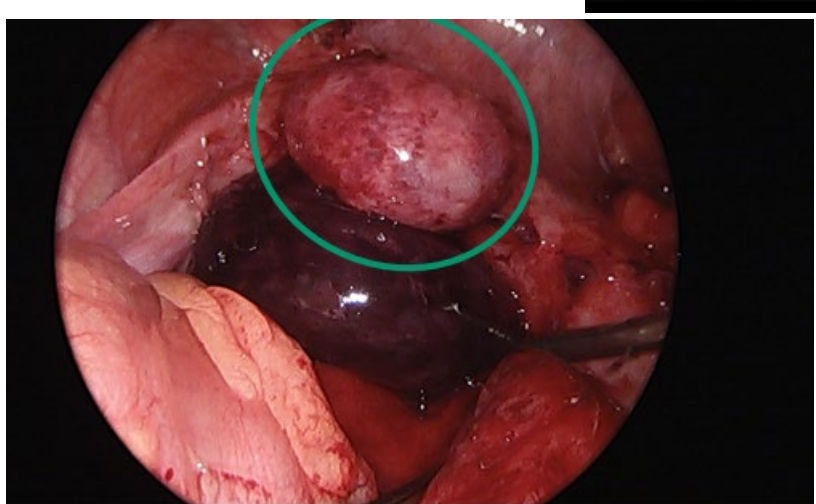


Fig. 10 Laparoscopic picture of the enlarged right ovary (green circled structure).

Discussion

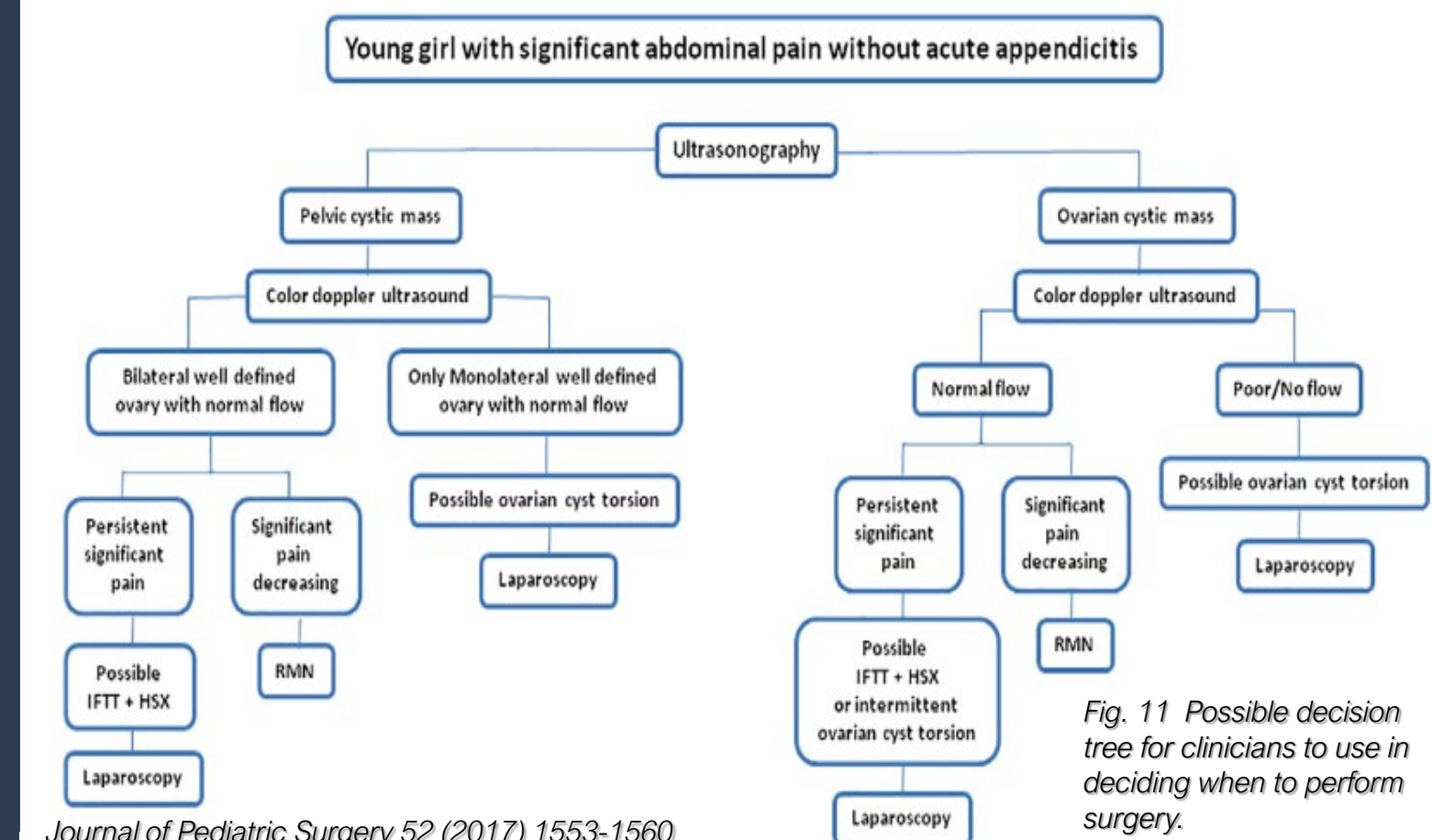
IFTT is a difficult pathology to distinguish, as the symptoms mimic other pathologies to include appendicitis, hemorrhagic ovarian cyst, pelvic inflammatory disease, and ovarian hyperstimulation syndrome.³

Intrinsic risk factors for developing IFTT include a hematosalpinx, hydrosalpinx, the fallopian tube having a spiral orientation, or due to the mesosalpinx having an abnormal length. Extrinsic masses like an ovarian or paratubal cyst can also increase the risk for developing IFTT.¹

The literature reports that torsion of the right fallopian tube is more commonly found compared to the left side. This may be due to the left salpinx being fixed to the sigmoid colon and mesentery, or it may also be due to the right lower quadrant being more commonly evaluated to rule out appendicitis.¹

Even though this condition is rare, it is treatable with surgical intervention, if the condition is diagnosed and treated in an efficient manner.¹ Finding the diagnosis quickly is key to getting the patient to surgery, if necessary. Figure 11 demonstrates a decision tree that can assist clinicians in deciding when to send a patient to surgery for laparoscopic evaluation.⁵ If it is decided to perform surgery, there are criteria based, on findings seen, as to whether a salpingectomy will be performed (Figure 12).⁶

Discussion (cont'd.)



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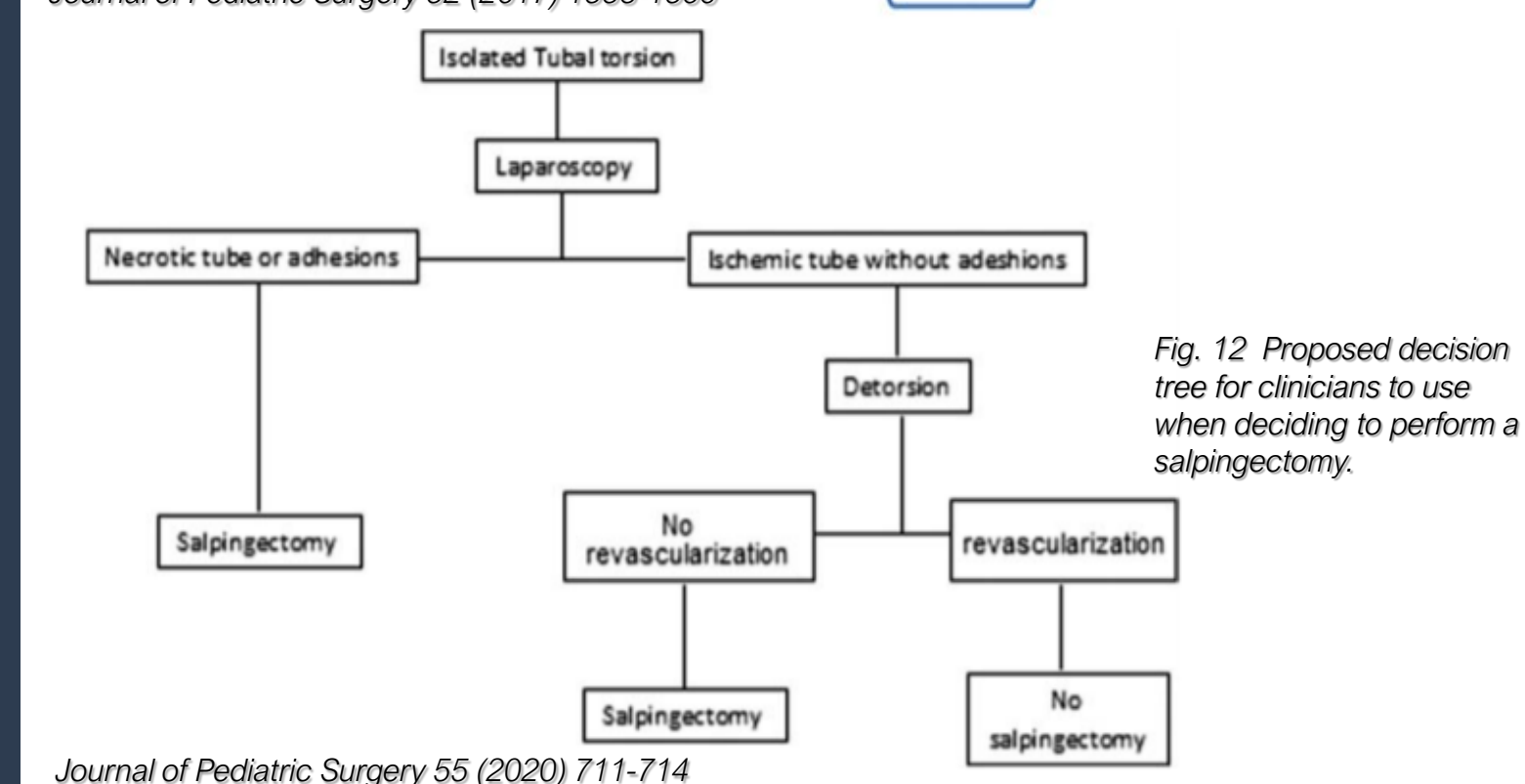


Fig. 12 Proposed decision tree for clinicians to use when deciding to perform a salpingectomy.

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Conclusion

Isolated fallopian tube torsion (IFTT) is a serious cause of pelvic pain in female patients. Because of the location, this condition can be difficult to differentiate from other more common pathologies to include appendicitis, ruptured ovarian cyst, or pelvic inflammatory disease. The treatment for IFTT is prompt surgical intervention to attempt to preserve the fallopian tube. Because of this, it is imperative to try to diagnose this condition as efficiently as possible. This case study demonstrated how multiple imaging modalities can be used to reach the diagnosis, and how one can be easily biased to favor the more commonly occurring pathology.

References

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