

## Torsion of Fatty Appendage of Falciform Ligament (F-FLAT): A Case Report

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### Abstract

**Background:** Torsion of fatty appendage of falciform ligament is an uncommon condition, manifested by extra-peritoneal fat torsion within the falciform ligament. It is a rare cause of severe abdominal pain. It can be recognized on CT or US [1].

**Case Description:** (F-FLAT) has similar pathophysiology and clinical presentation to epiploic appendicitis and infarction of the greater omentum [2].

**Conclusion:** The management of (F-FLAT) is most often conservative with anti-inflammatory agents. This condition should be considered as a differential to prevent unnecessary operative intervention and complications. Despite conservative management, this condition might last up to a few weeks and might need to be surgically resected [2].

**Keywords:** (F-FLAT); Torsion; Fatty Appendage; Falciform Ligament

### Introduction

The falciform ligament, is a fold of peritoneal tissue that is responsible for dividing the liver into a left medial and right lateral lobe. This structure is uncommonly affected by disease. The falciform ligament contains appendages of fat; that might undergo torsion, causing the fat to infarct. This condition is similar to infarction of the greater omentum or appendages of the appendix.

Patients often present with severe abdominal pain, nausea, and vomiting that might mimic an acute abdominal condition. It is recognized on a CT scan appearing as a "hyperattenuating rim" [2,3].

### Case Presentation

This is a case of a 69 year old male, a known case of diabetes, hypertension, ischemic heart disease, and hypothyroidism.

He presented to the emergency department complaining of severe abdominal/right loin pain, fever, nausea, and vomiting for one week.

A CT-scan showed an oval-shaped fat density structure lying adjacent to the falciform ligament inferiorly with the dens structure within.

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Figure 1



Figure 2

## Discussion

Intra-peritoneal focal fat infarction (IFFI) is a term most commonly used to describe infarction and necrosis of lipomatous tissue.

Epiploic appendicitis and infarction of the greater omentum are similar conditions under the same frame of (IFFI). They are not uncommon in literature opposed to (F-FLAT).

In clinical practice, signs and symptoms might mimic that of an acute abdomen.

The falciform ligament is a thin fibrous structure, lance-shaped, that connects the anterior liver border to the ventral abdominal wall. It divides the liver into a left medial lobe and right lateral lobe. It contains the ligamentum teres; which is the remnant of the left umbilical vein. It is supplied by the left inferior phrenic artery and middle segmental artery of the liver. The veins empty into the left inferior phrenic vein [3,4].

The falciform ligament is rarely involved in pathologic conditions. Conditions that are known to involve it are tumors, cysts, herniation, and abnormal vascularization [5].

Torsion of fatty appendage of falciform ligament can be recognized on a CT scan by a focal area of fat stranding and the appearance of a “hyperattenuating rim” [3,4].

A computerized tomography scan is of high diagnostic value and confirmation in 80% of cases was by an exploratory laparotomy [5].

The utilization of ultrasonography as a first-line investigation is usually necessary to exclude alternative diagnosis such as cholecystitis or biliary colic. However, on US the infarction of falciform ligament fatty appendage will most often demonstrate a non-compressible, hyperechoic, slightly heterogeneous mass at the site of tenderness [4,5].

So far, no magnetic resonance imaging descriptions of (F-FLAT) have been published in literature. However, it would be an adequate alternative due its ability to highly distinguish adipose tissue from edema or bleeding [5,6].

### Conclusion

In summary, torsion of fatty appendage of falciform ligament is a rare condition and therefore not thought of as a first line diagnosis. Conditions such as biliary colic, cholecystitis, epiploic appendages or greater omentum infarction usually have similar presentations and are considered at first. Awareness among physicians and radiologists about this condition is important to avoid unnecessary investigations and delays. Both ultrasonography and CT scan are highly diagnostic. This condition is often managed conservatively with anti-inflammatory agents.

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