

# Torsion of the Vermiform Appendix: Report of a Case and Review of the Literature

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## Abstract

Torsion of the vermiform appendix is a rare pathological entity. We present a case of a 22-year-old male with primary torsion of appendix. The condition has occurred without the association with other pathology. Diagnosis remains mostly an operative one. The literature is reviewed for the occurrence and characteristics of this condition.

## INTRODUCTION

While appendicitis is the most common surgical emergency of the abdomen <sup>1</sup>, torsion of the vermiform appendix is a rare pathological entity. It was first described in 1918 <sup>2</sup>. Several case reports have followed in the literature.

We report here a case of primary torsion of vermiform appendix.

## CASE REPORT

A 22-year-old male with no previous medical history, presented with 8-hour history of right lower quadrant abdominal pain of gradual onset. It was associated with anorexia and vomiting. No other symptoms were noted.

On examination, he appeared well. His heart rate was 70/min, blood pressure 120/70 mmHg and temperature 37.8°C. Abdominal examination revealed marked tenderness at the right iliac fossa with guarding and rebound tenderness. White blood cells count was  $15.3 \times 10^9 / L$ . The rest of his examinations and investigations were unremarkable. A diagnosis of acute appendicitis was made.

Laparotomy through a right gridiron incision was undertaken. A 12cm pelvic appendix was found with 360° anticlockwise rotation and a long mesoappendix. The appendix was gangrenous except near its base. Appendectomy was performed. No other pathology was noted in the abdomen. Postoperative recovery was uneventful.

Histopathology showed acutely inflamed appendix with gangrene.

## DISCUSSION

While appendicitis is the most common surgical emergency in the abdomen <sup>1</sup>, torsion of the vermiform appendix is a rare pathological entity. It was first described in 1918 <sup>2</sup>. Several case reports have followed in the literature.

We report here a case of primary torsion of vermiform appendix. Collins <sup>3</sup> studied 50,000 surgically removed appendices and did not describe a single case of torsion. The incidence in Chang's review <sup>4</sup> of 3003 appendectomies was two.

The etiology of appendicular torsion remains poorly understood. Different authors have proposed different mechanisms for torsion. Payne <sup>2</sup> proposed that torsion is secondary to irregular peristaltic movements of the appendix. Bevers <sup>5</sup> postulated that torsion is facilitated by inflammation of the distal appendix, opposing the popular view that favors the fact that torsion is a primary event. Dewan & Woodward <sup>6</sup> referred to a rare anatomical variation in which the appendix mesentery has a narrow base, and the azygotic folds, which normally attach the appendix laterally, are absent as a possible association with torsion of the appendix. Legg <sup>7</sup> proposed that torsion of the appendix is probably a result of enlargement of the distal end of the organ. This could probably explain why torsion tends to occur most commonly with mucocele and tumor of the appendix.

Among other factors, Gilchrist <sup>8</sup> added exercise as a possible additive if not a precipitating factor in torsion. Use of purgatives and fecal impaction may also predispose to

primary torsion<sup>9</sup>. Reports in the literature also include the association with other pathologies such as mucocele of the appendix and lipoma of the mesentery. The fact though remains that sometimes no obvious explanation could be given.

It is important to note that there are many common features in reports of torsion. Clinical presentation is in general that of acute appendicitis. Variations though exist. Petersen described a case with a prolonged symptomatic presentation of 2 weeks duration<sup>10</sup>. Recurrent right iliac fossa pain which is referred to as “appendicular colic” by Finch<sup>11</sup> is one presentation that is thought to be due to transient appendicular torsion and tends to resolve without surgical intervention.

Torsion has most commonly – as in our case also – been reported in the anticlockwise direction. None of the proposed mechanisms of torsion would account for this preference in direction of twist. Various degrees of torsion have also been observed. Degree of twist varies between 180° to 1080° as reported by different authors<sup>2,8,10,11,12</sup>. The site of torsion is either at the base or 1cm from the base<sup>25,67,89,10,11</sup>. A sharp line of demarcation is usually noticed between normal and abnormal appendix. Frequently, in cases of torsion the appendix tends to be lying free or pelvic in position. The reported length varies between 7 and 12.7cm.

The diagnosis of torsion remains an operative one. In one reported case<sup>13</sup>, after two ultrasonographic examinations in 24 hours, the sign of a distended intestinal loop became constant. The differential diagnosis was that of mucus

producing appendicular lesion versus that of appendicular torsion. Torsion was confirmed operatively.

In conclusion, torsion of appendix remains a rare diagnosis with unclear underlying etiology. Certain factors seem to be similar but none is a predictor of this condition. The diagnosis is mostly an operative one.

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