

APPENDICULAR VOLVULUS IN CHILDREN

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Introduction

Appendicular volvulus (AV) is a rare clinical phenomenon characterized by the organ’s twisting along its longitudinal axis causing acute abdomen syndrome.

The first case of AV was described by Payne JE in 1918, since then another 65 cases were reported in English specialty literature, including 26 cases in pediatric patients.

Because of lack of specific diagnostic features it is difficult to differentiate AV from other appendiceal pathologies.

Keywords

Vermiform appendix, volvulus, acute abdomen, appendectomy

Purpose

Review of specialized literature and analysis of demographic characteristics (age and sex), pathophysiological mechanisms, clinical features, informativity of paraclinical tests and treatment options in case of AV in children.

Material and methods

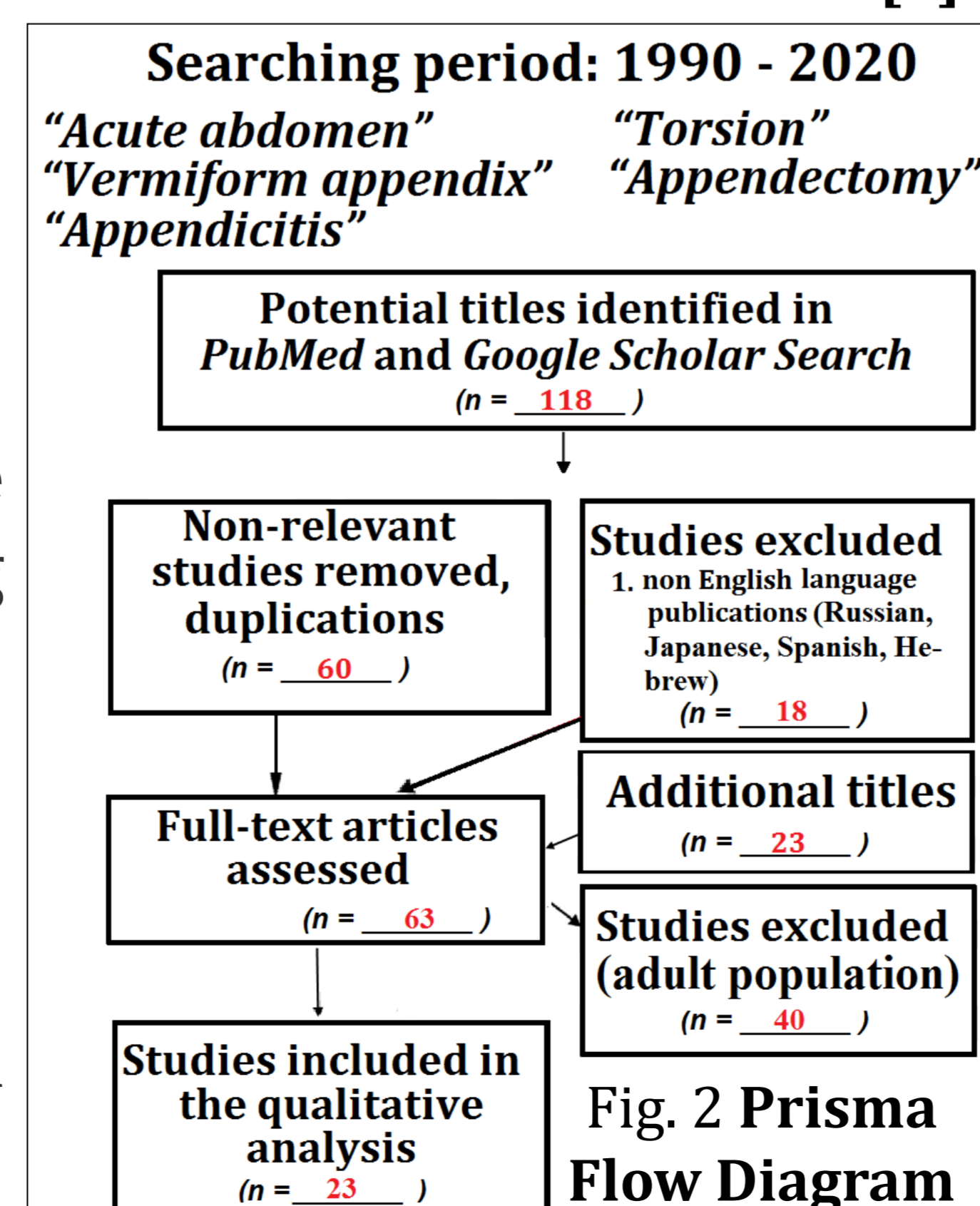
Examination of publications from PubMed and Google Scholar Search (searching period 1990-2020) according to the following keywords:

“Acute abdomen”, “Vermiform appendix”, “Volvulus”, “Torsion”, “Appendectomy”

with identification of 26 cases of AV in children reported during the period 1959-2020.



Fig. 1 Necrotic appendix twisted 720° in a clockwise direction [1]



Results

Mean age – 6,99 ± 1,143 years (95% CI: 4.636 – 9.343), M:W = 4.2:1. Angle of rotation 270°-1260°, direction of rotation – counterclockwise (n=13, 50%), point of torsion – at the base of the appendix.

Etiologies:

- primary causes – 15 (57.7%), as caecal malposition (an undescended and mobile cecum), small mesoappendix with a larger than normal appendix, absence of azygotic folds, or irregular, abnormal peristaltic bowel movements
- pathological conditions – 4 (15.4 %), as simple mucocele (n=1), lymphoid hyperplasia (n=1), intussusception (n=1), or intestinal duplication (n=1)
- In one case, combination of both factors, primary and secondary, is described (fan-shaped mesoappendix with a narrow base and appendiceal distension due to inflammation) (Fig. 3).



Fig. 3 Torsion of the appendix near the base[2]

Most patients present to hospital with clinical signs suggestive for acute appendicitis (abdominal pain, nausea, vomiting, fever, anorexia). Laboratory tests and paraclinical examinations are nonspecific.

Emergent appendectomy, open (n=21, 80.8%) or laparoscopic (n=5, 23.8%), is the treatment of choice, nonoperative management is contraindicated because of risk of perforation.

Conclusions

Appendicular volvulus is a rare pathological entity which presents clinically appendicitis like symptoms; however, it should be taken into consideration when assessing the patient with lower right abdominal pain.

References

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2. Suggala S, Gopo E, Sreejayan M, Sasi M. Torsion of Vermiform Appendix: A Case Report. Int J Surg. 2007;17(2):4-7