

Extent of Mesoappendix of Vermiform Appendix in Bangladeshi People

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Background: The mesentery of the appendix extends almost to the appendicular tip along the whole tube or may not be to the tip. The mesoappendix has a free border which carries the blood supply to the organ. Failure of the mesoappendix to reach the tip probably reduces the vascularization of the tip of the organ making it more liable to become gangrenous and hence early perforation occurs during inflammation. **Objective:** This cross sectional study was carried out to advance our knowledge regarding the extent of mesoappendix in Bangladeshi people and also to find out the variations in the anatomical positions of the vermiform appendix in Bangladeshi population and their distribution according to the sex. **Methods:** A total of 100 (60 male and 40 female) specimens of vermiform appendix were collected of different age and sex during postmortem examination in the morgue of Mymensingh Medical College from July 2006 to June 2007. Data was collected by convenient sampling technique. **Results:** In this study pelvic position of the vermiform appendix were common in both sexes. The two thirds extension of mesoappendix was found in 45% cases where as in pelvic position it was 26 (14 male and 12 female) cases. Half and whole extension of mesoappendix were found in 31% and 24% cases respectively. Among half extension of mesoappendix, retrocaecal position were found to be more (12) than other positions. In whole extension of vermiform appendix pelvic position were found to be common (16) than others. **Conclusion:** This study provides certain basic information of extent of mesoappendix of vermiform appendix of Bangladeshi population which is responsible for vascularization of the organ and severity during inflammation.

Key words: Vermiform appendix, Mesoappendix

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Introduction

The appendix is a caecal diverticulum appears 8th week of intrauterine life and increases rapidly in length, so that at birth it is a long blind tube. The appendix has short mesentery called the mesoappendix¹. The mesoappendix is a triangular peritoneal fold which invests the entire appendix and is derived from the posterior (left) layer of the mesentery of the ileum. Appendix is connected by a short mesoappendix to the lower part of ileal mesentery.

The mesentery of vermiform appendix hangs from the terminal part of the ileum. The mesentery of the appendix extends almost to the appendicular tip along the whole tube or may not be to the tip². A small fold of peritoneum extends from the terminal ileum to the front of the mesoappendix, called ileocaecal fold or bloodless fold of Treves, although it sometimes contains blood vessels and the space between it and mesoappendix is the inferior ileocaecal recess.

Another fold lies in front of the terminal ileum, between of the base of the mesentery and the anterior wall of the caecum. The fold is raised up by the contained anterior caecal artery and is called the vascular fold of the caecum. The space behind it is the superior ileocaecal recess. The mesoappendix has a free border which carries the blood supply to the organ. Failure of the mesoappendix to reach the tip probably reduces the vascularization of the tip of the organ making it more liable to become gangrenous and hence early perforation occurs during inflammation. In childhood, the mesoappendix is so transparent that the contained blood vessels can be seen. In many adults it becomes laden with fat, which obscure these vessels. Its layers enclose blood vessels, lymph vessels, nerves and a single lymph node². Mesoappendix appear at 8th week of intrauterine life with the appearance of appendix and its extension occur after birth by differential growth of caecum³. The extent of mesoappendix not related with age, height and weight of the person⁴. With these in mind, the present study was done to establish a Bangladeshi standard regarding extent of mesoappendix of vermiform appendix and anatomical position of vermiform appendix.

Methods

This cross sectional study was conducted on dead bodies received in the morgue of Mymensingh Medical College from July 2006 to June 2007. Data were collected during postmortem examination using a structured format by convenient sampling technique. In this study one hundred vermiform appendix of both sexes (male-60, female-40) were observed in situ dead bodies during post mortem examination. Vermiform appendix of the decomposed dead bodies & bodies with lacerated wounds involving appendix were not included in the study. The abdomen was opened by midline incision and the position of the vermiform appendix was observed in situ and the anatomical position was noted on the format. The caecum along with the vermiform appendix was excised. The specimens were then cleaned and washed and the extent of

mesoappendix was studied and recorded on the format.

Results

A total of 100 cases in order to observe the changes in vermiform appendix due to age, collected specimens were grouped according to the age. Age and sex distribution of cases are given in the Table I.

Table I: Age and sex distribution of subjects

Age (yrs)	No. of sex		Total
	Male	Female	
Upto 20	13	15	28
21 – 35	28	11	39
36-55	9	8	17
56-70	9	7	16
Total	59	41	100

In both sexes pelvic position of the vermiform appendix were found to be common, shows in table II.

Table II: Distribution of the subjects by sex and anatomical position of the appendix

Position of appendix	Male	Female
Retrocaecal	13	8
Retrocolic	6	5
Pelvic	29	22
Post-ileal	9	1
Pre-ileal	2	5

The two-thirds extension of mesoappendix was found in 45% cases where as it was 26 (14 male and 12 female) in pelvic position. Half and whole extension of mesoappendix were found in 31% and 24% cases respectively. Among half extension of mesoappendix, retrocaecal position were found to be more (12) than other positions. The whole extension of vermiform appendix in pelvic position was found to be common (16) than others (Table III).

Table III: Distribution of the extent of mesoappendix by sex and by anatomical position of the vermiform appendix

Position of VA	2/3 extension			½ extension			Whole extension		
	M	F	T	M	F	T	M	F	T
R. caecal	6	1	7	6	6	12	1	1	2
R. colic	1	1	2	1	2	3	4	2	6
Pelvic	14	12	26	5	4	9	10	6	16
Post ileal	6	0	6	3	1	4	0	0	0
Pre ileal	2	2	4	0	3	3	0	0	0
Total	29	16	45	15	16	31	15	9	24

Discussion

The appendix is supplied by a small artery that does not anastomose with other arteries. The blind end of the appendix is supplied by the terminal branches of the appendicular artery. Inflammatory oedema of the appendicular wall compresses the blood supply to the appendix and often leads to thrombosis of the appendicular artery. These conditions commonly result in necrosis or gangrene of the appendicular wall, with perforation⁵

In this study pelvic position of the vermiform appendix were found to be common in both sexes. The present study, observed that two-thirds and whole extension of the mesoappendix were more common in male and it was also common in pelvic variety.

In this study the extent of mesoappendix to two-thirds length of vermiform appendix was 45% and most common in pelvic variety positions. The extent of mesoappendix to ½ length of vermiform appendix was 31% and common in retrocaecal positions. Whole extension of mesoappendix in the vermiform appendix was 24% and it was common in pelvic variety. These findings are in consistent with the study of Bakheit and Bergmann where 2/3 extension of mesoappendix

were found to be more (43%) common in pelvic variety and ½ extension mesoappendix were more (40%) common retrocaecal position of vermiform appendix^{6,7}.

The present study also found that 2/3 extension is more than ½ and whole extension of mesoappendix.

Failure of the mesoappendix to reach the tip probably reduces the vascularization of the tip of the organ making it more liable to become gangrenous and hence early perforation during inflammation⁸.

Conclusion

By reviewing the findings of the study, pelvic variety of the appendix were found to be common. Pelvic position was common in 2/3 and whole extension of the mesoappendix where as the recto-caecal was common in ½ extension of mesoappendix. It was also found that 2/3 extension is more than ½ and whole extension of mesoappendix. As extension of mesoappendix is responsible for vascularization of the vermiform appendix and severity during inflammation, so the finding of the study e.g. 2/3 extension was more than others provide an important information.

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