



General Surgery

A CLINICAL STUDY ON THE VARIATIONS OF THE POSITION OF VERMIFORM APPENDIX IN CASES OF ACUTE APPENDICITIS

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ABSTRACT Vermiform appendix is a narrow, vermian, worm-shaped tube, arising from posteromedial cecal wall, 2 cm or less below the end of the ileocecal junction. It has an immunological function. Its tip is variable in position as well as its length. Its function is similar to that of a tonsil as it guards the small intestine from bacteria present in the large intestine. **Methods:** The cross-sectional study design was conducted to assess the positions of vermiform appendix, and its possible relations with age and sex among appendicitis patients. A total of 30 cases were studied using purposive sampling method during the study period July 2024 to January 2026. **Results:** In the present study, a total of 154 cases were analyzed to determine the position of the appendix in relation to age and sex. The retrocaecal position was the most common, observed in 112 cases (72.73%), followed by pelvic in 18 cases (11.69%), preileal in 16 cases (10.39%), and subcaecal in 8 cases (5.19%). The highest number of cases was seen in the 15–24 years age group (35.7%), followed by 25–34 years (29%). A statistically significant association was found between age and position of the appendix ($\chi^2 = 123.4$, $p = 0.001$), indicating that the distribution of appendix positions varies with age. **Discussion:** The position of the appendix is of great interest not only because of its evolutionary significance but also because of its pathological and surgical importance. **Conclusion:** This study determined retrocecal position is the most common followed by pelvic. There was no association between sex of the individual and position of appendix, there is a significant association between age of the individual and the occurrence of appendicitis.

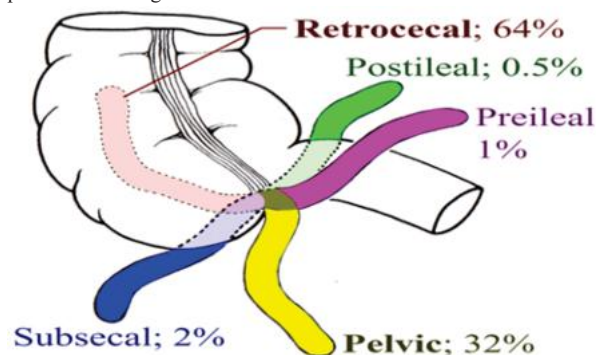
KEYWORDS :

INTRODUCTION

Vermiform appendix is a narrow, vermian, worm-shaped tube, arising from posteromedial cecal wall, 2 cm or less below the end of the ileocecal junction. It has an immunological function. Its tip is variable in position as well as its length. Its function is similar to that of a tonsil as it guards the small intestine from bacteria present in the large intestine. The narrow lumen of the appendix makes it prone to obstruction by fecolith, intestinal helminths, or foreign body resulting in inflammation.

Various positions of Appendix :-

Vermiform appendix shows variation in length and sex and racial groups. The position is closely related to the development of cecum. The position of appendix is variable but is usually retrocecal. The anatomical position of the appendix determines the symptoms and the site of muscular spasm and tenderness when the appendix is inflamed. Vermiform appendix is connected to short mesoappendix to the lower part of ileal mesentery. Failure of mesoappendix to reach the tip of the appendix probably reduces the vascularization of the tip of the organ; making it more liable to become gangrenous, hence easy perforation during inflammation.



AIM and OBJECTIVES :

To analyze the position of the appendix in cases of acute appendicitis in association with the age, sex and presentation of the patients

MATERIALS AND METHODS OF THE STUDY :

The cross-sectional study design was conducted to assess the positions of vermiform appendix, and its possible relations with age and sex among appendicitis patients. Subjects were patients who underwent appendectomy at SRMC, NANDYAL. Patients for whom appendectomy was done over the specified period of time were observed, and the positions of the appendix were inspected and recorded on the checklist (data collection form). A total of 30 cases were studied using purposive sampling method during the study period July 2024 to January 2026.

22 were male, and 8 female. The results were presented using tables, figures, and graphs. Associations between age of the patients and the occurrence of appendicitis, association between sex and positions of appendix were analyzed using Chi-square and $P < 0.05$ was considered as statistically significant. In this study, 19 (63.33%) males, and 11 (36.66%) females were studied. The mean age of these patients was 24 ± 10 . Retrocecal position was found to be the most common with 73.33% followed by pelvic 20%, preileal 3.33%, and the subcaecal with 3.33%, no case of other positions was recorded.

AGE

The most common age group affected by appendicitis was from 15 to 24 followed by 25 to 34 years. The association between age of the patients and occurrence of appendicitis in relation to position was statistically significant [$P < 0.05$].

SEX

The most common position in both male and female patients was retrocecal followed by preileal in male and pelvic in females. No statistical significant association was found between sex and position of appendix.

RESULTS:

In the present study, a total of 154 cases were analyzed to determine the position of the appendix in relation to age and sex. The retrocaecal position was the most common, observed in 112 cases (72.73%), followed by pelvic in 18 cases (11.69%), preileal in 16 cases (10.39%), and subcaecal in 8 cases (5.19%). The highest number of cases was seen in the 15–24 years age group (35.7%), followed by 25–34 years

(29%). A statistically significant association was found between age and position of the appendix ($\chi^2 = 123.4$, $p = 0.001$), indicating that the distribution of appendix positions varies with age.

With respect to sex distribution, 104 patients (67.5%) were male and 50 patients (37.5%) were female. The retrocaecal position remained the most common in both males (75 cases, 48.7%) and females (37 cases, 24%). Pelvic position was slightly more common in females, while preileal and subcaecal positions were more frequent in males. However, there was no statistically significant association between sex and position of the appendix ($\chi^2 = 3.056$, $p = 0.383$).

shows the distribution of appendix positions in relation to sex among the study population. The retrocaecal position was the most common, observed in 112 cases (72.7%), with a higher proportion in males (75 cases, 48.7%) compared to females (37 cases, 24%). The pelvic position was seen in 18 cases (11.7%), followed by preileal in 16 cases (10.4%) and subcaecal in 8 cases (5.2%). Overall, males constituted 104 cases (67.5%) and females 50 cases (37.5%) out of a total of 154 subjects. Statistical analysis using the chi-square test showed a value of 3.056 with a p-value of 0.383, indicating no significant association between the position of the appendix and sex.

DISCUSSION:

The position of the appendix is of great interest not only because of its evolutionary significance but also because of its pathological and surgical importance. The position of the appendix is important in the pathogenesis, presentation, surgical approach, and prognosis of the disease (Ashindoitiang and Ibrahim, 2012; Philip et al., 2014). In this study, a retrocecal appendix is dominant with 73.33% of subjects; this is similar to studies done in Bangladesh (Uttam et al., 2009), Pakistan (Wakely, 1933), and Sudan (Bakheit and Warille, 1999) and different from studies in the United Kingdom (Irfan et al., 2007), Pakistan (Wakely, 1933), and Iran (Nilesh et al., 2014).

Pelvic position of appendix was 11.69% in this study, which is similar to a study done in Pakistan (Wakely, 1933), far from studies done in and in the United Kingdom (Irfan et al., 2007), Sudan (Bakheit and Warille, 1999), and Iran (Golalipour et al., 2003). Preileal position of appendix was 10.39%, the United Kingdom (Irfan et al., 2007) which is very far from the results done in Pakistan (Wakely, 1933) and near to the result done in India (Ahmad et al., 2014).

Subcecal position of appendix was 5.19% similar to studies done in Kenya, the United Kingdom (Irfan et al., 2007), Pakistan (Wakely, 1933), Kenya (Philip et al., 2014), and India (Das et al., 2014).

No case of other positions was found in this study. In this study, the association between age of the patients and occurrence of appendicitis in relation to position was statistically significant ($P < 0.05$); the most common age group affected by appendicitis was from 15 to 24 followed by 25 to 34 years. This is similar with studies done in Nigeria; 36.25% of the appendicitis patients were aged from 21 to 30 (Ashindoitiang and Ibrahim, 2012).

No statistically significant association was found between sex and position of appendix ($P = 0.383$); the most common position in both male and female patients was retrocecal followed by preileal in male and pelvic in females. This is similar to studies done in the India (Das et al., 2014), Iran (Nilesh et al., 2014), (Irfan United Kingdom et al., 2007).

CONCLUSION:

This study determined retrocecal position is the most common followed by pelvic. There was no association between sex of the individual and position of appendix, there is a significant association between age of the individual and the occurrence of appendicitis. Further studies need to be carried out throughout the country so that generalization will be possible.

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