

Case Report

UNIQUE 28 CM LONG VERMIFORM APPENDIX

Ravindra Kumar Boddeti ¹, Roopa Kulkarni ², Pradeep Kumar H Murudkar ³.

¹ Lecturer, International Medical School, Management & Science University, Malaysia.

² Professor, M.S.Ramaiah Medical College, Bangalore, Karnataka, India.

³ Professor & Head Department of Anatomy, KBNIMS, Gulbarga, Karnataka, India.

ABSTRACT

Vermiform appendix is a vestigial organ in human beings and situated at the ileocaecal junction. It opens into the caecum. It is a narrow tube of varying length. The normal, average length is about 5 cm to 10 cm. The longest vermiform appendix has been reported to be measuring about 25 cm. In the present case a long vermiform appendix was observed in female, formalin fixed, adult cadaver during the routine dissection for medical undergraduates. The Vermiform appendix was retrocaecal and extending to retro colic in position and its length was measured as 28 cms. When such a long vermiform appendix is present, the inflammatory conditions may simulate enteritis, salpingitis or endometriosis of the uterus. Sometimes it may herniate through a weak abdominal wall like the intestines or the peritoneum. Therefore the knowledge of the length and the position of the vermiform appendix are important clinically.

KEY WORDS: Vermiform Appendix; Length; Ileocaecal Junction, Appendicitis.

Address for Correspondence: Dr. Ravindra Kumar Boddeti, Department of Anatomy, International Medical School, Management & Science University, Malaysia. **E-Mail:** dr.ravindrakumar@gmail.com

Access this Article online

Quick Response code



Web site: International Journal of Anatomy and Research
ISSN 2321-4287
www.ijmhr.org/ijar.htm

Received: 15 Aug 2013

Peer Review: 15 Aug 2013 Published (O):30 Sep 2013

Accepted: 25 Sep 2013 Published (P):30 Sep 2013

INTRODUCTION

The vermiform appendix is a tubular, narrow, worm shaped part of the alimentary canal lies at the ileocaecal junction and communicates with caecum. Its normal length is between 5 cm and 10 cm but the length can be up to 25 cm. [1,2]. Among the various positions, the retrocaecal and retro colic positions are the most common positions seen. The vermiform appendix is present in hominoids including apes and humans. It has been mentioned that in primates the caecum was large and vermiform appendix was either small or absent and considered as ancestral and very primitive [3].

It was also stated that the caecal length decreases as it is traced evolutionarily from monkeys to humans with the gradual increase in the size of the vermiform appendix.

In prosimians and New world monkeys the vermiform appendix is absent and with a large caecum and in old world monkeys the cellulose fermenting caecum was almost absent with a recognizable vermiform appendix [3]. When an unusual vermiform appendix is present and inflamed, it may simulate the endometriosis in case of females [4].

CASE REPORT

During the routine dissection of formalin fixed adult female cadaver for the undergraduate medical students, this anomaly was observed at Khaja Banda Nawaz Institute of Medical Sciences, Gulbarga, India. It was noticed that there was a very unique, unusually long vermiform appendix which was retrocaecal in position. It had wound partially obliquely, the posterior part of the ascending colon and appeared normal.

Therefore it was also retro colic in position. The length was measured as 28 cms. (Fig. 1 & Fig. 2)



Figure 1: Folded and Unfolded length of the Appendix.



Figure 2: Showing the folded length of the Appendix.

DISCUSSION

The definition of vermiform appendix has been stated as a narrow, thick, lymphoid rich apex of the caecum. Its internal diameter has been reported as a narrow space which is of the size of a match stick [3]. The vermiform appendix developed as a conical extension from the apex of the caecal diverticulum which was arising from the antimesenteric border of the proximal part of the post arterial segment of the mid gut [5]. In the foetal period the caecum was tube shaped and gradually changed the shape to quadrilateral due to asymmetrical growth of the wall which made the vermiform appendix to occupy different positions, most common is the subcaecal position, with changing peritoneal relations [6].

The length of the vermiform appendix, varied from less than 2.5 cm to 30 cm. It is longest in childhood but diminishes in size throughout adult hood [3]. The function of caecum and vermiform appendix are homologous, perform similar function and have a common origin in the development. The vermiform appendix has been named as the 'true caecal apex' and in primates there are some intermediate sets present in which there is 'large caecum and absence of appendix' or 'small caecum and appendix present'. Most of the primates the intermediate between the two is seen as a narrow, thick walled, lymphoid rich caecal apex [3]. It has been proposed that the vermiform appendix is the shrunken part of the caecum which was the structure present in the ancestral human beings

and is considered to be the organ of alimentary tract which is concerned with the cellulose digestion [7].

In one of the case reports, the vermiform appendix was lying behind the medial half of the ascending colon and was running parallel to the mesenteric taeniae, without any mesentery, measuring about three quarters of an inch in width and extended along the whole length of ascending colon. It was covered by the left layer of the ascending mesocolon and bound to the ascending colon till the hepatic flexure. Lower end appeared funnel shaped and appeared like caecum which was identified as the caecum due to the presence of the taeniae coli [8]. The long, inflamed vermiform appendix had undergone torsion and lead to complications like that of torsion of any part of gut. The length of that inflamed appendix noted was 28 cm [9].

Surgeons have claimed that a 20.5 cm long vermiform appendix was identified which was inflamed and removed surgically [10,11].

The longest vermiform appendix reported in the literature was found in Croatia in 2006 and it was 26 cms according to Guinness World Records. It was about 17 cm long in child and reported as having inflamed with symptoms and signs of cholecystitis, or gastritis. Therefore the surgeon must be aware of such anomaly while treating the abdominal disorders [12].

In some cases the herniated vermiform appendix was seen in the region of the drain site in the lower abdominal wall and called drain site hernia seen in the subcutaneous tissue of the lower anterior abdominal wall which was a rare case [13].

The other most uncommon anomalies are duplex or double vermiform appendix which was associated with other gastro intestinal developmental anomalies like colonic defects, imperforate anus or inflammatory conditions like acute appendicitis [14,15].

In the present study the vermiform appendix appeared normal with an unusual length measuring about 28 cm.

CONCLUSION

The vermiform appendix is considered as a vestigial structure. It is present and longer in herbivores as it is considered as a part of the

caecum and is concerned with cellulose fermentation and digestion. During foetal life it acts as an organ which produces the cells of immune system. Developmentally the caecum and vermiform appendix are from commencement of the post arterial segment of the mid gut from the antimesenteric border. The vermiform appendix appears from the conical apex of the caecum and then elongates. The size and position of the vermiform appendix depends on the caecal growth. The longest vermiform appendix has been mentioned in the Guinness World Records which states that it measured 26 cm and was found in Croatia. In the present study the length was 28cm and has exceeded the length of Guinness World Records. Surgeons also have seen and removed long vermiform appendix which was causing problems like acute appendicitis, torsion, double vermiform appendix which were symptomatic and also some of them simulated salpingitis, endometriosis and nonspecific pelvic inflammatory conditions etc. Therefore the knowledge of parameters, position and function of vermiform appendix are of interest for evolutionist and surgeons.

Conflicts of Interest: None

REFERENCES

1. Gray's Anatomy, 40th Edition, The Anatomical Basis of Clinical Practice, Expert Consult - Online and Print By Susan Standring, PhD, DSc. Churchill Livingstone, 2009.
2. Last's Anatomy : Regional and Applied by Chummy S. Sinnatamby and R. J. Last (2011, Paperback) Elsevier-Health Sciences Division, 2011.
3. Douglas Theobald, The talk origins archive, Exploring the Creation/ Evolution Controversy. The vestigiality of the human vermiform appendix, a modern reappraisal. , Last Update July 19, 2013
4. Dr. L. H. Honore M.B. Diseases of the Colon & Rectum May-June, 1979, Volume 22, Issue 4, pp 262-266.
5. The Developing Human: Clinically Oriented Embryology with Student Consult Online Access, 9th Edition by Keith L. Moore. Saunders; 9th edition, 2011.
6. M A Malas, A Gökçimen, O Sulak, Growing of caecum and vermiform appendix during the fetal period. Fetal Diagnosis and Therapy, 16(3):173-7. PubMed
7. Vermiform appendix/Vermiform appendix - Wikipedia, the free encyclopedia.htm
8. Edward Fawcett An Unusually Large Terminal Vermiform Appendix, with Recurved Small Conical Cæcum; with some remarks on the Peritoneal Pouches J Anat Physiol. 1895 July; 29(Pt 4): 498-500.

9. Yoshida Takuya, Morimoto Yoshikazu, Kurihara Yojiro, Nishikawa Kazuhiro, Tanaka Yasuhiro. A case report of torsion of an unusually large vermiform appendix, Journal of Japan Surgical Association, 2005, No. 6; Page 1376 – 1378.

10. Rais Ahmed Malik, Shabeer Hussain Mir, Imza Feroz, Mir yasir, Khalil M. Baba, Khurseed Alam. An unusual case report - longest appendix in India (20.5 cm) Oncol. Gastroenterol. Hepatol. Reports Vol.2, Issue 1, Jan–Jun, 2013)

11. Report of an extremely long vermiform appendix. *JAMA*. 1920; 75(19):1269. doi:10.1001/jama.1920.26220450001013.

12. Ahmed Alzaraa and Sunil Chaudhry* An unusually long appendix in a child: a case report *Cases Journal* 2009, 2:7398

13. Markus Gass, Anatol Zynamon, Markus von Flüe, and Ralph Peterli, Case Report Drain-Site Hernia Containing the Vermiform Appendix: Hindawi Publishing Corporation, Case Reports in Surgery, Volume 2013 (2013), Article ID 198783, 1-4 pages

14. Kothari AA, Yagnik K R, Hathila V P. Duplication of vermiform appendix . *J Postgrad Med* 2004;50:285-286,

15. M.A. Mir, B.S. Bali, M. S Mohsin Manzoor: Duplex Vermiform Appendix: A Case Report of a Rare Anomaly. *The Internet Journal of Surgery*. 2012 Volume 28 Number 2. DOI: 10.5580/2ab0.

How to cite this article:

Ravindra Kumar Boddeti, Roopa Kulkarni, Pradeep Kumar H Murudkar.
Unique 28 cm Long Vermiform Appendix. *Int J Anat Res*, 2013;02:111-14.