



Morphometric Study of Adult Ileo Caecal Region

KEYWORDS

caecum ,vermiform appendix ,terminal ileum ,retrocaecal.

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ABSTRACT Aim of study : To study the morphological variations of ileocaecal region which includes caecum ,vermiform appendix &terminal ileum.

Materials and methods :All the specimens were taken from embalmed cadavers after routine dissection for undergraduates in Government Medical College Ananthapuramu of Andhra Pradesh.Among 50 cadavers dissected ,we examined for shape of Caecum ,measurements of Caecum,site of entry of ileum into Caecum,measurements of Appendix & position of Appendix .Corresponding photographs were also taken.

Results :Inall the cadavers shape of caecum is adult assymetrical .Out of 35 male cadavers thelength was ranging from 54-65mm &breadth was ranging from 65-75 mm.In 15 female cadavers length was ranging from 50 -62mm , breadth was ranging from 65 -75mm.In all 50 (100%) adult specimens the ileum has opened posteromedially into the caecum.Average length of appendix in males 77.2mm and average breadth is 12.42mm.In females average length is 69.33mm and breadth is 10.8mm.Most common position of appendix was retrocaecal and least common was pre& post ileal position.

Conclusion :Positional variations ,morphological variations of caecum and appendix are very important for surgeons because while performing surgeries at ileocaecal region & for good prognosis.

INTRODUCTION

As given in the standard Text book – Grays Anatomy ,the ileocaecal region comprises of caecum , Appendix and terminal part of ileum.

a) Caecum is the first part of large intestine which is a large cul-de-sac situated in the right iliac fossa along with the appendix and the terminal part of ileum. It continues as ascending colon from the level of entry of ileum on the medial side. Its average length is about 6cm and breadth is about 7.5cm.The adult shape of caecum has been classified as Ampullary type, but it varies partly because the ileum opens postero medially or due to hypertrophy of one sacculations.

b) Vermiform Appendix is a narrow, tubular, worm like structure, arising from postero-medial wall of the caecum about 2cm below the ileocaecal junction. Appendix is suspended by a peritoneal fold known as meso-appendix which contains vessels,nerves & lymphatics, one lymph node at appendiculo-ileal angle.and nerves.Retrocaecal position is the commonest position .The length of appendix varies from 2-20 cm . The vermiform appendix is present only in humans, certain anthropoid apes and the wombat (A nocturnal , burrowing australian marsupial). Appendix is the only part of Large intestine which is devoid of Taeniae Coli, Sacculations and Appendices Epiploicae. At the base the diameter is more & gradually tapers towards the tip.Its lumen is almost absent during life due to the elevations caused by underlying Lymphoid Follicles.

c) Ileum which is the third part of the small intestine is narrow and firm with a small lumen due to very few mucosal folds.The wall of the ileum invaginates into the cavity of the caecum on the posteromedial aspect forming an oblique orifice guarded by the two labia. This part of ileum is devoid of any movement as is at the right end of the

mesentery.

MATERIALS & METHODS

The present study is of 50 adult human Ileo Caecal regions obtained from 21 cadavers of Department of Anatomy & 29 obtained from the mortuary of Forensic Medicine, Government Medical College, Ananthapuramu. The Caecum and Appendix were examined in cadavers after routine dissection by the medical students .

The shape , length, breadth, position of both caecum and vermiform appendix were measured.The opening of ileum into the caecum was also noted.We observed a few variations which were more regional and such information is essential for all surgeons.Instruments required are – scale (plastic) , divider & other dissection instruments.



FIG NO. SHOWING MEASUREMENTS OF ADULT CAECUM AND APPENDIX

Figure 1 : Method adopted for measuring The caecum and Appendix . (LA –Length of Appendix, BA –Breadth of Appendix ,LC –Length Of Caecum ,BC-Breadth of Caecum, ULC-Upper Level of Caecum)

RESULTS

SHAPE OF THE CAECUM:

-In all 50 adult cadavers shape of the caecum was asymmetrical shape._

TABLE 1 : SHOWING SHAPE OF CAECUM IN ADULTS

No of Specimens	Foetal (Conical) Shape	Adult shape (Asymmetrical)	Quadrate Shape
50	-	50	-

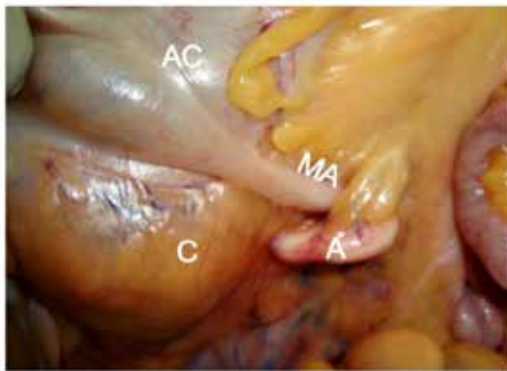


FIG. NO. SHOWING MESO APPENDIX EXTENDING TILL MIDDLE OF APPENDIX

Figure 2 : Adult shape of caecum.

(C – caecum, MA – Mesoappendix, A –Appendix, AC –Ascending colon)

MEASUREMENTS OF CAECUM :

The length of caecum in 35 adult males was varied from 54mm – 65mm with an average of 59.5mm and the breadth was varied from 65mm- 75mm with an average of 70mm. In 15 adult females length of caecum is varied from 50mm- 62 mm with an average of 56 mm and the breadth of the caecum is varied from 65mm – 75mm with an average of 70mm.

TABLE 2: SHOWING MEASUREMENTS OF CAECUM IN ADULTS

Total number	Length		Breadth	
	35 Male	15 Female	35 Male	15 Female
50	54-65mm	50-62mm	65-75mm	65-75mm

POSITION OF THE CAECUM:

TABLE 3: SHOWING POSITION OF CAECAUM IN ADULTS

Sl.No	Total .No	Sub-Hepatic	Right Lumbar	Right Iliac fossa
1	50	Nil	Nil	50

SITE OF ENTRY OF ILEUM INTO CAECUM:

TABLE 4 : SHOWING SITE OF ENTRY OF ILEUM INTO CAECUM

Specimens	Opening on postero-medial aspect	Opening on medial aspect	Opening on antero-medial aspect	Opening on anterior aspect
Adult	50	-	-	-



Figure 3 : Entry of ileum into Postero medial aspect of caecum

MEASUREMENTS OF VERMIFORM APPENDIX:

IN 35 adult male specimens ,length of the Appendix was varied from 30mm- 130mm with average length of 78.2 mm. Breadth of the Appendix at the base varied from 7mm – 22mm with average being 12.42mm. In 15 adult female specimens ,the length of appendix varied from 30mm- 110mm with average being 70.33mm. where as the breadth is ranged from 5mm – 20mm with average of 10.8mm._

TABLE 5 : SHOWING MEASUREMENTS OF VERMIFORM APPENDIX

Total specimens	Length in Males	Length in Females	Breadth in Males	Breadth in Females
50	30mm - 130mm	30mm - 110mm	7mm – 22mm	5mm – 20mm
	Average: 78.2mm	Average: 70.33mm	Average : 12.42 mm	Average : 10.8 mm

POSITION OF VERMIFORM APPENDIX :

Out of 50 adult specimens, in 32 specimens Appendix was found in retro caecal position, in 14 specimens Appendix was in pelvic position, in 2 specimens Appendix is in sub-caecal position, in 1 specimen preileal position and in 1 specimen it was in post ileal position.

TABLE 6 : SHOWING POSITION OF APPENDIX IN ADULTS

Adult specimens	Pre ileal	Post ileal	Pelvic	Retro Caecal	Sub Caecal	Para Caecal
50	1	1	14	32	2	Nil
Percentage	2 %	2 %	28 %	64 %	4 %	Nil

**Figure: 4- A: Adult appendix in retrocaecal position B: Adult appendix in pelvic position****Figure : 5 : Adult appendix in Post ileal position****DISCUSSION**

According to Treves(1885) and Pavlov&Petrov(1968) Ampullary shaped caecum was present in majority of cases ,in present study also all the specimens of caecum are in ampullary shape. Wood jones.F reported that caecum is usually in Right iliac fossa and very rarely in Left iliac fossa. Wood jones .F,Wood Burne's measured the caecum i.e maximum length was 6 cm, width was 7.5cm. In present study length of caecum was in between 5cm – 6.5 cm and breadth was ranging from 6.5cm – 7.5cm.The breadth was more in females.

According to Ravi kumar et al (2009) the position of appendix was retrocaecal in 35.8 % ,pelvic in 35.8% , Promonteric in 2.98% , paracolic in 4.62% , subcaecal in 5.9% , preileal in 14.9%. In our present study retro caecal position was observed to be in 64%.Length of the appendix was ranging from 30mm – 130mm in males and 30mm-110mm in females. breadth was ranging from 7mm-22mm in males and 5mm-20mm in females.Comparitively both length and breadth are more in Males. Ravi kumar (2009) hails from Eluru, and our study was in Ananthapuramu. Though both the studies are from Andhra Pradesh, their seem to be regional variations in the position of appendix. The percentage regarding the pelvic position of appendix was high in Eluru,AP as per Ravi kumar et al i.e 35.8% and in our study at Ananthapuramu,AP , the pelvic position was in 28%.Pre ileal position of appendix was high in Eluru i.e. 14.9% than in our study at Ananthapuram i.e. 2%.

According to Scheye.Th et al (1983) terminal part of ileum opened into medial aspect of caecum but in our present study in all specimens, ileum opened into posteromedial aspect of caecum.

CONCLUSIONS

One of the common causes for pain in the abdomen,both Acute or Chronic, especially in the Right Iliac Fossa is due to some pathology in appendix or caecum. Etiology may be bacterial and nutritional habits of the local population or due to some congenital anomaly.Position,shape & measurements of both caecum & appendix are more important for the most of the General surgeons because they perform surgeries on the ileocaecal region.

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