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Anatomy of Caecum in Cadavers.

M Kavimani*, K Suba Anandhi and Christilda Felicia Jebakani***.**

*Department of Anatomy, Sree Balaji Medical college, and Hospital, Bharath University, Chrompet, Chennai, Tamil Nadu, India, **Indira Gandhi Medical college and hospital, pondicheery, ***Madras Medical College, Chennai.

ABSTRACT

Aim of this study to detail discussing the anatomy of caecum in adult cadavers. Anatomical and topographical variations of the caecum are known to occur. Anatomical variations in caecum also have been observed. The study was carried out on 50 adult cadavers over a period of 2 years. The anatomy of caecum was studied in detail. 50 embalmed cadavers (30 male and 20 female) were dissected to study position, shape, length and width of caecum. The study was done in the department of anatomy of madras medical college, Chennai. Out of 50 adult cadavers in 48 cases the caecum was found in right iliac fossa, but only in two cases it was situated in the sub-hepatic region. Out of 50 adult cadavers in 46 cases shape of caecum were normal adult type(Ampullary), 2 cases were of exaggerated variety, one case was of infantile type, and one case was of fetal type. The length of caecum in 30 adult males was $6.0 \text{ cm} \pm 0.96 \text{ SD}$ [range :4.0 – 9.0 cm] and width was $6.1 \text{ cm} \pm 1.0 \text{ SD}$ [range:3.5 -12.0 cm]. The length of caecum in 20 adult females was $5.9 \text{ cm} \pm 0.37 \text{ SD}$ [range: 5.5 – 6.5 cm] and width was $6.6 \text{ cm} \pm 0.38 \text{ SD}$ [range:5.5 -6.7 cm]. The knowledge of anatomy of caecum is of significant importance during surgical and radiological procedure.

Keywords: caecum, infantile, exaggerated.

**Corresponding author*

INTRODUCTION

The cecum or caecum from the Latin *caecus* meaning blind, is an intraperitoneal pouch, that is considered to be the beginning of the large intestine. It receives chyme from the ileum, and connects to the ascending colon of the large intestine. It is separated from the ileum by the ileocecal valve (ICV) or Bauhin's valve. It is also separated from the colon by the cecocolic junction. While the cecum is usually intraperitoneal, the ascending colon is retroperitoneal.^[1]

In herbivores, the cecum stores food material where bacteria are able to break down the cellulose. This function no longer occurs in the human cecum (see appendix), so in humans it is simply a dead-end pouch forming a part of the large intestine.^[4]

It is the large cul-de-sac which lies in the right iliac fossa and continues with the ascending colon at the level of the ileal opening.[Gray's Anatomy 2000] Normally caecum lies in on the peritoneal floor of the right iliac fossa and its lower end lies at the pelvic brim [Sinnatamby CS 1999]. The shape of caecum has been classified^[1] into four types, ie, conical 2%, quadrate 3%, 90% normal and ampullary 4%(adult type) by Treves]Position differs from right iliac fossa to the subhepatic position.^[1]

MATERIAL AND METHODS

The study was carried out on 50 adult cadavers over a period of 2 years. The anatomy of caecum was studied in detail. 50 embalmed cadavers (30 male and 20 female) were dissected to study position, shape,length and width of caecumThe study was done in the department of anatomy of Madras Medical College, Chennai. Based on shape, the caecum was categorized into fetal, infantile, adult, exaggerated groups. Length of a caecum was measured from a horizontal line at the level of the ileocaecal orifice to its lowest point with the help of thread and thread's length was measured by measuring scale and values were recorded^[3].Width of caecum was measured with the help of thread at the midpoint of the caecum and thread's length was measured by measuring scale and values were recorded^[3].

RESULTS

Out of 50 adult cadavers in 48 cases the caecum was found in right iliac fossa, but only in two cases it was situated in the sub-hepatic region. Out of 50 adult cadavers in 46 cases shape of caecum were normal adult type (Ampullary), 2 cases were of exaggerated variety, one case was of infantile type, and one case was of fetal type.

The length of caecum in 30 adult males was $6.0 \text{ cm} \pm 0.96 \text{ SD}$ [range :4.0 – 9.0 cm] and width was $6.1 \text{ cm} \pm 1.0 \text{ SD}$ [range:3.5 -12.0 cm].

The length of caecum in 20 adult females was $5.9 \text{ cm} \pm 0.37 \text{ SD}$ [range :5.5 – 6.5 cm] and width was $6.6 \text{ cm} \pm 0.38 \text{ SD}$ [range:5.5 -6.7 cm].

DISCUSSION

There are various studies done on positions, shapes and dimensions of caecum all over the world such as Gopalipur et al.(2003) in iran,Katzurskj et al.(1979) in Zambia, Solanke T.F.(1970) IN Nigeria,But there are few studies in India like Ajmani M.L. and Ajmani K.(1983) in Uttar Pradesh region,Geethanjali H.T. and Lakshmi Prabha Subhash (2012) in Karnataka and Nilesh Ashok Salwe, P.G. Kulkarni and R.S. Sinha in Western Maharashtra region(2014) on this subject.

According to the standard text book descriptions^[7] the caecum is the first part of large intestine and is normally situated in the right iliac fossa in the adults and occasionally may be found in the pelvic cavity,right lumbar region,mid line or even near the umbilicus^[1].In the present study out of 50 adult cadavers in 48 cases the caecum was found in right iliac fossa,but only in two cases it was situated in the sub-hepatic region.These findings concur with the standard text book descriptions^[4].

Most authors have described the shape of caecum was categorized into fetal, infantile or conical, adult, exaggerated groups^[2]. In present study out of 50 adult cadavers in 46 cases shape of caecum were normal adult type (Ampullary), 2 cases were of exaggerated variety, one case was of infantile type, and one case was of fetal type. (Table no-1)

The average length of the caecum in adults has been mentioned as 60 mm in the article^[5]. Buchanan has quoted a length of 62.5 mm and Treves quotes a 56 mm^[6]. In the present study the average length of the caecum was found to be 61.5 mm which is closer to the figure quoted by Buchanan. The average breadth of the caecum in the present study was found to be 65 mm which is less than what was observed by previous authors (75mm). (Table no-2)

Table 1

Caecum shape	Male	Female
Adult	26	16
Exaggerated	2	2
Fetal	1	1
Infantile	1	1
Total	30	20

Table 2: Length and Width of Caecum

Authors	Length	Width
Standring	60	75
Romanes	60	75
Morris	60	75
Buchanan	62.5	75
Treves	56	75
Wood Burne	60	75
Moore	50-70	-
Present study	61.5 mm	65 mm

CONCLUSION

A study of gross anatomy of caecum has been undertaken to elucidate the variations in their position and measurements. The data obtained was compared with the findings of similar studies and discussed. This information therefore is expected to help surgeons in the localization of the caecum during various abdominal operations.

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