

REVISITING THE SURGICAL ANATOMY OF THE DUODENOJEJUNAL FLEXURE IN CHILDREN

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Introduction: The duodenojejunal flexure (DJF) is an important paediatric surgical landmark to establish normal intestinal rotation. This is of critical importance in malrotation with volvulus; a condition which carries a mortality rate of 30% and accounts for nearly ¼ of paediatric intestinal transplantation. However, the degree of variation in the position of the DJF in the paediatric population has not been defined. Traditionally the DJF is said to be located to the left of the left pedicle of the vertebral body (VB) at the level of the duodenal bulb or pylorus. The evidence base for this is unclear.

Aims: The aim of the current study was to determine the position and relations of the DJF in infants and children utilising archival cross-sectional imaging.

Methods: CT scans of 120 children were divided *a priori* into three age groups and systematically reviewed. The DJF position was measured with relation to the: VB level, midline, anterior-posterior distance from the VB, transpyloric plane, and inferior mesenteric vein. The position of the third part of the duodenum and length of the mesenteric root was also analysed.

Results: There was considerable variation in the DJF position with respect to the above landmarks in all age groups. The VB level of the DJF was centred on L1; but ranged between T11-L3 (see Figure summarising the 0-2 age group). In 3% of children the SMA/SMV relation was abnormal despite normal rotation. The third part of the duodenum was consistently found to be retromesenteric. The root of the small bowel mesentery ranged between 7-22cm and generally lengthened with increasing age.

Conclusions: Due to its variable position, the DJF on its own may not be a reliable landmark for establishing normal intestinal rotation. Further comparative studies are required to characterise the anatomical features of normal and abnormal rotation.