International Journal of Research in Medical Sciences
Rao JM et al. Int J Res Med Sci. 2014 Feb;2(1):341-343
www.msjonline.org
pISSN 2320-6071 | eISSN 2320-6012

DOI: 10.5455/2320-6012.ijrms20140267

Case Report

Variation in arterial supply of human vermiform appendix

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Received: 17 September 2013
Accepted: 16 October 2013

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ABSTRACT

Precise knowledge of vascular variation and planning of conducting surgical and radiological procedures is important during appendectomy. During the routine medical undergraduate educational dissection of 63 year old male cadaver we found appendicular artery (AA) a branch of the inferior division of the ileocolic artery (ICA). The AA passed in front of the terminal part of the ileum, and entered the mesoappendix of the vermiform appendix. It runs near the free margin of the mesoappendix and ends in branches which supplied the appendix. The reminding of this type of variation is also important while performing the surgeries or dissections.

Keywords: Caecum, Appendix, Appendicular artery, Arterial supply, Variation, Ileum

INTRODUCTION

Bruce et al. and Koster et al. stated that appendix is supplied by only one artery.[1,2] In addition to this the present case also stresses the importance of detailed study in variation of AA course and its branches. Documentation of such literature holds the great surgical importance.[3] The AA is said to be an end artery, and the tip is least vascular so that in obstruction of the artery gangrenous change is observed in the tip.

Appendicitis is one of the most common diseases that need emergency surgery. Inflammation of the appendix results in the clinical syndrome known as acute appendicitis which is the most common cause for acute abdomen in young adults. If diagnosed late, it results in increased morbidity and mortality rate. Despite extraordinary advances in modern radiographic imaging and diagnostic laboratory investigations, diagnosis of acute appendicitis remains an enigmatic challenge and a remainder of an art of surgical diagnosis. Vascular variations and anomalies are always common and a great challenge to the anatomists and surgeons. Appendectomy is one of the most common surgical procedures in case of appendicitis; appendicular carcinoid tumour etc. require good knowledge of arteries supplying it and the possible variations, then surgeon can avoid intra and post-operative complications like haemorrhage.[4] Therefore, a thorough knowledge of normal and abnormal anatomy, arterial supply of the vermiform appendix is very important to surgeon performing abdominal operations in adults, children and infants.

CASE REPORT

During the routine dissection of 63 year old male cadaver in the Department of Anatomy, Mamata Medical College, Khammam. We found the following variation in which the terminal parts of ICA along with its all branches to the appendix were neatly dissected and traced carefully and observation was recorded (Figure 1).

In this case it was seen that the appendix is supplied by AA which is a branch of lower division of ICA it is an end artery. It passed anterior to the terminal part of the ileum and entered the mesoappendix at a short distance from its base. It runs along the free border of mesoappendix it gives a recurrent branch at the base which anastomoses with a branch of posterior caecal artery. The main artery runs towards the tip of the

appendix and then in the free border of the mesoappendix. The terminal part of the artery lies actually on the wall of appendix near the tip and in appendicitis the vessel may be thrombosed (Figure 2).

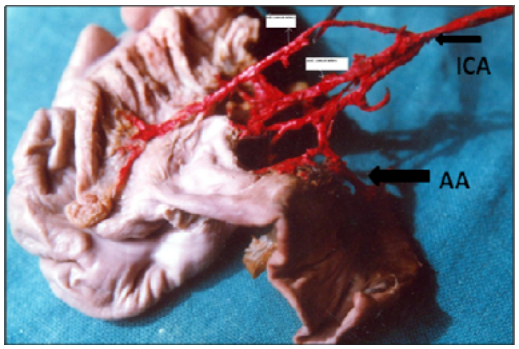

Figure 1: AA=Appendicular artery, ICA=Ileocolic artery.

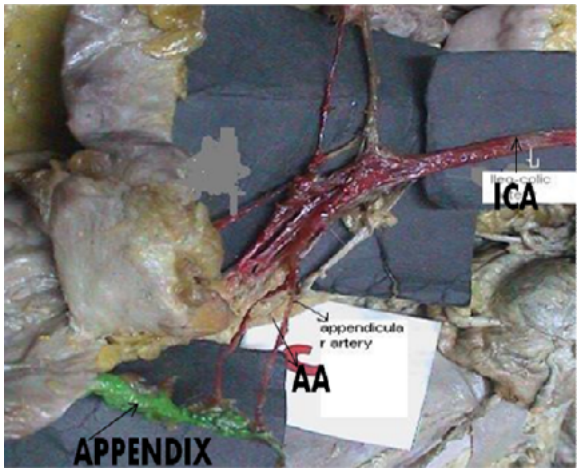

Figure 2: ICA and its branches with AA anterior to the ileum.

DISCUSSION

The findings of the present study have been compared with those of previous workers on the subject.

Umesh Kulkarni K.[3] reported a case study AA which entered the mesoappendix anterior to the ileum and supplied the appendix our study agreed with this study.

In the present study the appendicular artery is arises from the ileocolic artery this type of origin has also been mentioned by various authors.[5-9] Luzsa. G[10] mentioned appendicular artery arises from the ileocolic artery in 1/3 of cases. Bergmann RA et al.[11] stated the origin of appendicular artery from the ileocolic artery in 48.5% of case. The appendix gets its blood supply from the appendicular artery, which originate from the ileocolic artery in 28% of cases Volker S et al.[12] Hosmani Veeresh et al.[4] studied the 19.23% appendicular artery originated directly from the ileocolic artery.

The appendicular artery arised from the inferior division of ileocolic artery which is an conformity with the Hosmani Veeresh et al.[4] 46.15% showed the origin of appendicular artery from the inferior division of ileocolic artery. Cunningham[13] and Michel RB[14] illustrate the origin of appendicular artery from the descending branch of the ileocolic artery. Susan Standring[15] in Gray's Anatomy mentions the origin of appendicular artery from the inferior division.

The accessory appendicular artery supplies only to the base of the appendix, while the main appendicular artery supplies the whole length of the appendix which is agreement with that report in the literature Subhadradevi V.[16]

CONCLUSIONS

The knowledge of various vascular variations and anomalies are involving the appendicular artery should be born in mind during surgical and radiological evaluations. Knowledge of such variations will help in interpretation of diseases and also helpful during surgical procedures and dissections.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

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DOI: 10.5455/2320-6012.ijrms20140267
Cite this article as: Rao JM, Mohammad R. Variation in arterial supply of human vermiform appendix. Int J Res Med Sci 2014;2:341-3.