

THE IMPORTANCE OF NORM IN SURGICAL ANATOMY

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Abstract: It is no secret that when studying human anatomy, the emphasis is on memorizing typical variants of the structure of certain anatomical structures. At the same time, not many people pay enough attention to mastering variant anatomy. Of course, the most common variants of structure, the so-called "norm", deserve more attention. However, we should not miss the fact that often the typical anatomy of certain structures occurs in half of the cases, and sometimes does not exceed 25-30% of all variants.

Keywords: anatomy, variant anatomy, surgery, norm, portal vein.

INTRODUCTION

Technological progress makes its own adjustments to medicine, particularly surgery. The development of surgical treatment options is associated with a thorough and detailed knowledge of variant anatomy. When considering the anatomical features of certain organs, attention is drawn to such a concept as "norm". The definition of the concept of norm in human anatomy is based on identifying the most common variants of the structure of various organs and tissues in a representative group.

MATERIALS AND METHODS

For a better understanding of the issue discussed in this article, we provide several examples of variant anatomy of various anatomical structures. The authors analyzed the variant anatomy of abdominal organs, since surgeons in the overwhelming majority of cases deal with this anatomical region. The data of domestic and foreign literature on the disciplines of "normal anatomy", "surgical anatomy", as well as related disciplines were analyzed, the most suitable examples for demonstrating the importance of variant anatomy were determined.

RESULTS AND DISCUSSION

Variants of portal vein trunk formation.

One of the classifications used for the formation of the portal vein (PV) trunk is the classification of P. Krumm et al., developed in 2011. According to this classification, the variants of PV trunk formation were distributed as follows (Fig. 1):

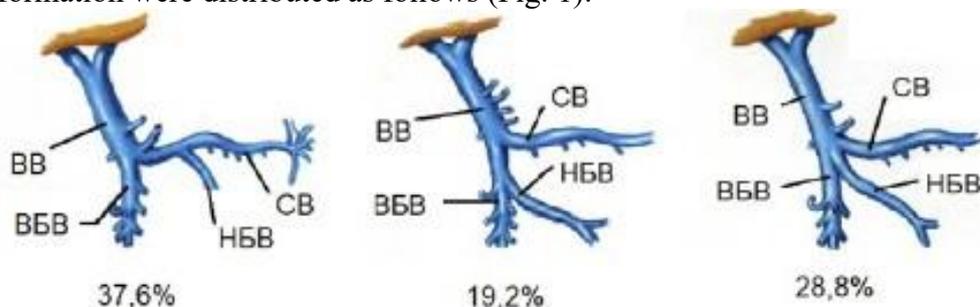


Fig. 1. Variants of formation of the portal vein trunk according to P. Krum,m
The superior mesenteric vein (SMV) + (inferior mesenteric vein (IMV) + splenic vein (SV)) is the most common variant of the formation of the SV trunk, which consists of the fusion of the

IMV and SV into a single vessel, which then unites with the SMV, resulting in the formation of the SV trunk, accounting for 37.6% of all variants. SV + (SMV + IMV) is a variant when the SMV merges with the IMV, and then merges with the SV through a common trunk, thus forming the SV trunk, - 19.2%. SMV + SV + IVC - in this case, the listed veins are isolated and connected to each other, forming the SV trunk, - 28.8%. Other variants of the formation of the SV trunk occur in 14.4% of cases [1-3]. Thus, the most frequently encountered variant of explosive barrel formation occurs in approximately 1/3 of all cases. By simple calculations, we find that the remaining variants of explosive barrel formation occur in 2/3 of cases.

Various atlases and textbooks on normal human anatomy speak of an isolated entry of the right colic vein (RCV) and the right gastroepiploic vein (RGV) into the SMV. In reality, the formation of a single trunk by merging the RCV and RGV – the trunk of Henle (TG) – is most often observed. At the same time, various variants of the formation of this confluence are described, and in many cases, among the components of the TG, not only the RCV and RGV are described, but also other veins, for example, the anterior superior pancreaticoduodenal vein (ASPDV), the accessory or superior RCV, the middle colic vein (MCV), and even the ilioocolic vein [4].

The most thoroughly studied variant anatomy of the inferior pancreaticoduodenal artery (IPDA) was T. Takamuro et al. in 1998. They identified 4 types of formation of the inferior pancreaticoduodenal artery:

- Type A - the IPDA originates from the first jejunal artery (FJA) (55.6%);
- Type B - the IPDA originates from the SMA (24.2%);
- Type C - independent origin of the anterior and posterior IPDA in separate trunks from the SMA (3.3%);
- Type D - the anterior IPDA originates from the FJA, and the posterior IPDA - from the SMA or the right hepatic artery (16.9%) [2]. As we can see, the most common variant (55.6%) is when the NPDA departs from the PTCA, while most surgeons are confident that the NPDA in a typical case departs from the SMA.

Knowledge of various variants of the formation of the SG and NPDA is becoming especially relevant in the era of the development of endovideosurgical technologies in oncology, especially with the increased frequency of surgical interventions on the organs of the hepatopancreatoduodenal zone.

Variants of branching of the vagus nerves in the abdominal esophagus and cardiac stomach.

At first glance, the classification of N. Michels may seem too cumbersome and difficult to remember. However, P. V. Balakhnin et al. in their work describe 114 variants of blood supply to the liver. After reading this work, the classification of N. Michels no longer seems so comprehensive and difficult to remember. Taking this into account, the conclusion suggests itself that it is practically impossible to know by heart absolutely all variants of the structure of certain anatomical structures, especially if there are more than a hundred of them. Nevertheless, one should not limit oneself to memorizing only one typical variant of the structure [4].

CONCLUSION

Having analyzed some classifications of variant anatomy of various structures, it can be noted that in a number of cases the most frequently encountered variant of anatomy makes up at best half of all variations. Consequently, every second patient has an atypical structure of one or another anatomical structure. Undoubtedly, this plays a key role, since surgeons, especially

beginners, are not always prepared to encounter variant anatomy during routine surgical interventions, which in turn can lead to difficulties, and often to an unfavorable outcome.

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