



## LETTER TO EDITOR

# “Hands” figural teaching method in hepatic anatomy: A surgeon’s teaching experience

Dear editor,

We have recently read the article “Totally laparoscopic living donor right hepatectomy in a donor with trifurcation of bile duct” published in your journal by Kuo-Hsin Chen et al. From New Taipei City, Taiwan, in which an application of totally laparoscopic approach for right liver graft harvest in a donor with trifurcation of the bile duct was described.<sup>1</sup> The report adds evidence of the feasibility of pure laparoscopic right donor hepatectomy and describes the necessary steps for bile duct division in donors with trifurcation of bile duct. At the same time, the report also emphasized that determining the cut point of bile duct is challenging.

Here we would like to describe our clinical and teaching experience on knowledge of liver segment and gallbladder triangle anatomy. Using the image teaching method, the liver anatomy knowledge is skillfully memorized through gesture changes, helping young doctors to quickly grasp the position of each liver segment and bile duct. In the study of the right half of the liver, the left hand is compared to the right liver and the image memory of the upper and lower anterior segments of the right liver carried out. Put the left hand out. Take the fingertips as the side of the head, the wrist as the side of the foot, and the entire left hand as the right side of the liver. Then the vertical left hand is the right side of the liver when the patient is standing. Take the plane of the metacarpophalangeal joint as the section plane perpendicular to the vertical direction of the left hand. Take the plane of the vertical direction of the middle finger of the left hand as the longitudinal section, dividing the left hand into four parts. The right anterior lower part nearest to us is divided into a starting point, going counterclockwise, passing through each part exactly as the four parts of the right hemisphere, namely V, VI, VII and VIII.<sup>2</sup> As for the study of left liver, the left hand is stretched out like a knife, with the palm perpendicular to the forearm. At this time, the left hand is regarded as the left liver when the patient is standing. The metacarpophalangeal joint is taken as the boundary, the palm part is regarded as the left

medial lobe of the liver (section IV), the finger part as the left lateral lobe of the liver, the upper part of the finger part as the upper part of the left lateral lobe (section II), and the lower part of the finger part as the lower part of the left lateral lobe of the liver.

Finally, we would like to introduce the learning of the extrahepatic biliary tract and hepatic artery with the right finger. The common anatomical relationship between the extrahepatic biliary tract (gallbladder, hepatic duct, common bile duct) and the hepatic artery is difficult for beginners to establish three-dimensional concepts,<sup>3</sup> especially the right hepatic artery. In this part the right forearm and hand is straighten horizontally, Fingers spread separate and the index finger raised and pressed against your middle finger. At this point, the right hand is equivalent to the patient lying flat, the thumb is the gallbladder, the index finger is the bile duct, the middle finger is the right hepatic artery, the ring finger is the left hepatic artery, the bile duct and the right hepatic artery cross obliquely, the right hepatic artery in the gallbladder triangle is oblique to the right gallbladder artery. The hepatic artery and the bile duct are roughly interrelated outside the liver and the portal vein is located in the back between them (Fig. 1).

This teaching method through the change of the hand gesture, aims to building of a profound three-dimensional structure, greatly improving learning efficiency.

## Conflicts of interests

All the authors have no potential conflicts of interest to disclose.

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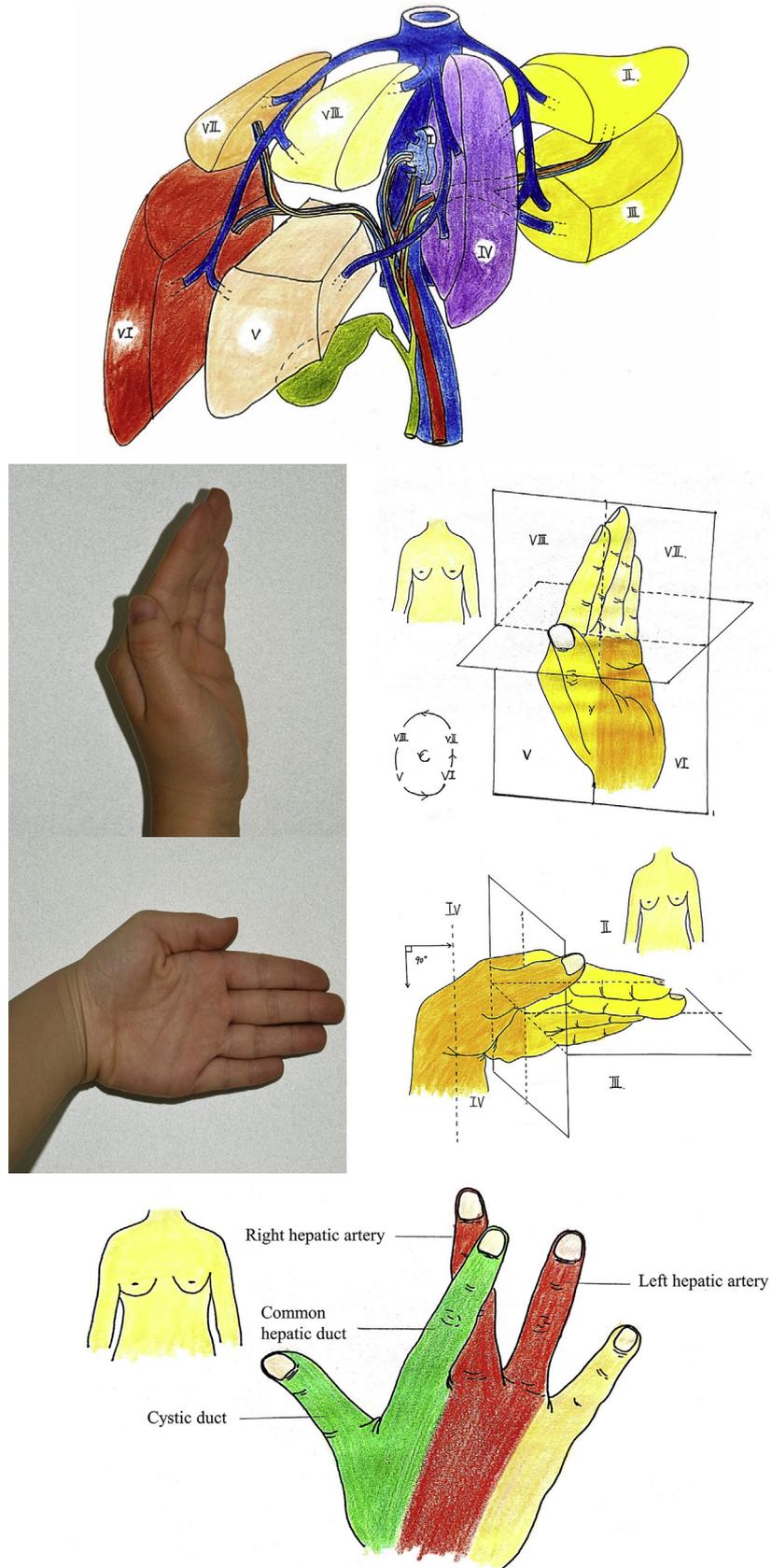


Fig. 1 "Hands" figural teaching method in hepatic anatomy.

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## Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.asjsur.2018.12.002>.

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