

## **An anatomico-radiological study on the pattern of branching of the left portal vein**

Veronica Macchi<sup>1</sup>, Andrea Porzionato<sup>1</sup>, Aldo Morra<sup>2</sup>, Carla Stecco<sup>1</sup>, Anna Parenti<sup>3</sup>, Raffaele De Caro<sup>1</sup>

<sup>1</sup> Department of Human Anatomy and Physiology, Section of Anatomy, University of Padova, Italy

<sup>2</sup> Section of Radiology, Euganea Medica Group

<sup>3</sup> Department of Medico-Diagnostic sciences

Branching anomalies of the left portal vein can be managed safely with new surgical techniques but they can represent contraindications for living donor transplantation. Moreover, in children with extrahepatic portal vein obstruction a successful shunting requires detailed knowledge of the branching of the umbilical segment of the left portal vein. The aim of the present study was to investigate the prevalence of variant of the left portal vein ramification in a large group of patients. 200 patients who underwent consecutive contrast-enhanced abdominal CT examinations performed with a 16-MDCT scanner were analysed. Two observers evaluated both thin axial sections and 3D maximum-intensity-projection and volume-rendered images for branching patterns of the left portal vein. Conventional main portal vein anatomy was present in 64.5% of the patients. In 10% of the patients, the main portal vein trifurcated into the left portal and right anterior and posterior portal veins. In 22% of the patients, the main portal vein divided into a common left portal vein-right anterior portal vein trunk and the right posterior portal vein. In proximity to the angle between the left PV and the left paramedian vein the branches for segment II origin. From the cul de sac, lateral pedicles origin, destined to segments III and IV segments. The left lateral vein gave rise to 1-2 segmental branches for segment II. The left PMV gave rise to branches for segment IV (from 1 to 5) and for segment III (1-2). The knowledge of the pattern of branching of the left portal vein is useful for the surgical approach of the recessus of Rex. The presence of multiple vessels for segment IV has to be known for transplantation of split liver.

Key words

Liver, portal vein, radiologic anatomy