IJAE
Vol. 122, n. 1 (Supplement): 35, 2017
ITALIAN JOURNAL OF ANATOMY AND EMBRYOLOGY

The internal thoracic vein for the breast and thoracic surgical reconstruction: anatomy of the valves

Barbara Buffoli[1], Vittoria Gabusi[1], Gianpaolo Faini[4], Elisa Borsani[1], Lena Hirtler[2], Manfred Tschabitscher[1], Mauro Labanca[1], Arianna Coniglio[3], Luigi Fabrizio Rodella[1]

[1] Division of Anatomy and Physiopathology, Department of Clinical and Experimental Sciences, University of Brescia, 25123 Brescia, Italy
[2] Center for Anatomy and Cell Biology, Department for Systematic Anatomy, Medical University of Vienna, A-1090 Vienna, Austria
[3] Surgical Clinic, Department of Clinical and Experimental Sciences, University of Brescia, 25123 Brescia, Italy
[4] Plastic Surgery, Spedali Civili Brescia, 25123 Brescia, Italy

The internal mammary veins (IMV) are suitable vessels for thoracic wall reconstruction thanks to their relatively predictable anatomy and because they are less affected by atherosclerosis, injury or scarring of previous surgery and radiotherapy. Their position near to the lateral border of the sternum allows easier access for surgeon and the possibility of placing the most vascularized part of a flap for breast reconstruction in the medial thoracic region [1]. As the complexity of reconstruction has increased, the use of the caudal portion of IMV has been reported as a convenient option for additional venous drainage. This procedure, requires retrograde blood flow that could be altered by the presence of efficient valves in the IMV.

In this study, we evaluated 32 IMVs dissected from 16 fresh cadaver thoracic walls. Retrograde blood flow and the presence of valves were investigated.

We observed an efficient flow in 18 IMVs, partial flow in 7 IMVs and no flow in 5 IMVs. In these last, single and/or multiple sacciform swelling and competent valves were macroscopically observed. Histomorphological analysis by Haematoxylin and Eosin and Masson-Goldner Trichrome staining confirmed their presence. In addition, some rudimental valves, not identified macroscopically, were found during histomorphological analysis.

Taking together, these data highlight the possible presence of complete or rudimental valves in IMV. This aspect should be considered when retrograde flow of IMV as a single venous drainage was performed during surgical breast and thoracic reconstruction.

References

[1] Dupin et al. The internal mammary artery and vein as a recipient site for free-flap breast reconstruction: a report of 110 consecutive cases. Plast Reconstr Surg 98:685-689.

Keywords

IMV, valves, retrograde flow, free flap reconstruction