AUTHOR'S REPLY

Reply to: "The minimal access technique for cavoatrial renal cancer thrombectomy – to be used in all cases?" Antoniewicz AA, Zapała Ł. Cent European J Urol. 2015; 68: 318-319.

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We read the comments "The minimal access technique for cavoatrial renal cancer thrombectomy - to be used in all cases?" with great interest [1]. We agree with the authors of the commentary that the idea of thrombectomy with the use of a balloon catheter has been previously introduced [2]. However, in their method Yanaga et al. used 12F aortic balloon catheter to perform atrial thrombectomy, whereas we used 22F Foley catheter to retrieve a thrombus. Furthermore, unlike the called method of atrial tumor thrombus (TT) removal, our technique abrogates the need for cardiopulmonary bypass (CPB), reducing therefore the risks associated with extracorporeal circulation with or without hypothermic circulatory arrest such as increased operative time, cardiorespiratory complications, postoperative bleeding, coagulopathies and permanent neurological dysfunction such as hallucinations or stroke.

We agree with the authors of the commentary that the total mean intraoperative blood loss of 3,150 ml observed in our case series is substantial [3]. It was attributed to collateral veins around the kidney and occurred predominantly before cavotomy and tumor thrombus retrieval. Our data on the mean blood loss are indeed comparable or better than the blood loss and transfusion requirements reported in other studies, which analysed surgical outcomes after conventional or minimally invasive interventions for level IV TT [2, 4, 5]. This, however, should not be compared with the results presented in two papers called by authors of the commentary for the three main reasons [6, 7]. Firstly, our technique of thrombectomy is dedicated to treat the level IV TT i.e. thrombus extending into the right atrium, and consequently reports on the mean blood loss occurring during the level IV TT removal. Whereas, the reported median blood loss of 1,300 ml in the paper by Kaag et al. refers to the data obtained from 78 patients who underwent radical nephrectomy with thrombectomy for TT of level I-IV (with only 3 cases

with tumour thrombus extending into the right atrium) [6]. In that case series the blood loss for level IV TT ranged from 450 ml to 2,500 ml, and as explained by one of the authors of the report (unpublished data - private correspondence), the exceptionally low blood loss of 450 ml in one case was predominantly due to the character of a skinny thrombus that extended like a cobra snake into the right atrium. This feature of a TT allowed a cardiac surgeon to open the left renal vein at the inferior vena cava junction and to back the thrombus out completely intact with no blood loss for that part of the surgery. Similarly, the paper by Chen et al., which was cited by the authors of the commentary, reported on the median blood loss of 2,500 ml in a heterogeneous group of 32 patients with TT [7]. The second source for the misleading interpretation of our results by the authors of the commentary is the fact that in the latter study, the authors performed their surgery with the use of CPB, which allows for a bloodless removal of a thrombus from the heart, but comes, however, at the expense of increased risk of several serious aforementioned complications [7]. Finally, in our case series intraoperative blood loss was expressed as a mean value, whereas in the two referred to papers the median values were given instead. These are not directly comparable and such comparison should be avoided in general.

We agree with the authors of the commentary that our Foley catheter assisted technique for the treatment of the cavoatrial TT, obviating need for thoracotomy, extracorporeal circulation, and/or hypothermic circulatory arrest, is a valuable option for surgical management of patients with level IV TT. It should be, however, implemented with caution and with the continuous intraoperative use of the transoesophageal echocardiography (TOE) to reduce the risk of TT fragmentation and potentially fatal sequelae. We use TOE routinely in our day-to-day practice to assess the extent of the TT preoperatively, and intraoperatively to guide

Foley catheter assisted TT retrieval from the right atrium, as well as to detect any TT fragmentation or pulmonary emboli that may occur during the

procedure. We believe that contemporary, modern management of TT should involve the TOE support as an imaging modality of choice.

References

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