Removal of the intra-aortic balloon pump: Why and in what way? Author's reply

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Dear Dr. Engin and Dr. Guvenc,

Thank you very much for your interest in our article entitled "Initial experience of intra-aortic balloon pump removal using Angio-Seal". It is a great pleasure for us to respond to your questions.

We did not include patients in whom the intra-aortic balloon pump (IABP) had been longer than 7 days because this was one of the exclusion criteria described in the Methods section. During this study prolonged IABP therapy (above 7–10 days) was an indication for surgical removal of the balloon according to our institutional protocol. Nowadays in patients with no signs of thrombosis at the IABP entry site (confirmed by ultrasound), we use Angio-Seal for removal.

The idea that a properly trained perfusionist removes IABP using manual pressure is very good, and we are aware it can reduce the workload of doctors. In the Silesian Centre for Heart Diseases, we have well-trained physician assistants (PAs) [1]. The pioneer training program for physician assistants in Poland started in 2010 at our institution on the initiative of Professor Marian Zembala [2]. PAs are a great support in our work, and they can remove IABPs using manual pressure. We think there is no reason why properly trained medical professionals (not doctors) should not be allowed to remove IABPs using Angio-Seal.

The main idea behind this study was to investigate how the use of Angio-Seal will affect the occurrence of vascular complications, but of course, one effect not mentioned in this article is the possibility of faster patient mobilization compared to manual compression [3].

We did not use the axillary route for IABP placement. This access site is very rarely used for this kind of mechanical support. In our institution, we use it only in patients waiting long for orthotopic heart transplantation, but, in our practice, IABP placement is usually a surgical procedure [4].

In the cited literature, low body mass index (BMI), tall height, and severe atherosclerosis are important reasons that increase complication rates during vascular closure device implantation. In our study group, the mean BMI was 27.33 kg/m^2 (minimum 21.34, maximum 39.45, SD 5.0). The mean height was 1.72 m (minimum 1.58, maximum 1.85, SD 0.078). The complication rate was very low. In both cases, after primary Angio-Seal closure, there was blood oozing from the groin, which was successfully treated with conventional manual compression (in the first case 10 minutes and 15 minutes in the second). Both patients were male with hypertension, diabetes, overweight, and IABP support that had lasted 5 days. One of these patients developed a small 3 cm hematoma that was treated conservatively. Severe peripheral arterial disease was an exclusion criterion in our series because it is a contraindication for Angio-Seal use.

At present, we think that the method of balloon extraction is not the only thing to consider for minimizing vascular complications of IABP therapy. In our opinion, the most important concern is the method of balloon implantation. In daily practice for femoral catheterization, we think that ultrasound-guided puncture of the common femoral artery should be used rather than other techniques [5].

We hope our explanations have answered your questions. Once more, thank you for your interest in our study.

Article information

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