Submersible anchor joint for fixation of long-term central venous catheters

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INTRODUCTION: Treatment of patients with hematological profile requires long-term central venous access. One option to provide such access is a tunneled Broviack type catheter, which has a dacron cuff that plays an additional fixative role.

To effectively "ingrow" the cuff, it takes about a month to ensure its immovable position.

To ensure the immobility of the cuff, various versions of anchor joints have been proposed earlier, but they require additional cuts of the skin.

We proposed a submersible anchor stitch to fix the cuff without additional incisions on the skin.

MATERIALS AND METHODS: The study was conducted between January 2013 and February 2018. Tunneled catheters were installed in children aged 1 month to 17 years. Until 01.03.2014, the installation of tunneled catheters was not accompanied by an additional cuff fixation - 206 were installed. In the period from 01.03. 2014, the cuff of all the catheters was additionally recorded by a submerged anchor suture. Similarly, 1003 catheters of the Broviack type were installed.

RESULTS: Between January 2013 and March 1, 2014, when the cuff was fixed, during the first two months of operation of the catheters, 10 catheters were accidentally completely removed, which was 4.8%. In addition, in 23 patients (11.1%), the catheter was pulled up during operation prior to the appearance of the cuff at the catheter inlet. After March 2014 to the present time, 14 catheters were accidentally completely removed, which amounted to 0.7%. In 1 case (0.001%), the catheter was displaced before the cuff appeared at the catheter inlet.

CONCLUSIONS: In the group of patients aged 3 to 17 years, the use of a submerged anchor seam allowed a 7-fold reduction in the frequency of accidental removal of the catheter in the first months of operation, and virtually eliminating the possibility of catheter displacement.

DISCUSSIONS: as can be seen from the illustrations, the catheter is completely submerged under the skin, the cuff is tightly fixed to the muscle. The method has an important clinical, socio-economic significance. Effective fixation of the catheter in children and adults is possible only with additional fixation of the cuff. The proposed method allows us to fix the cuff in the planned location with sufficient accuracy.