

Thus, complications developed more often in patients of group 2 compared with patients of group 1: 17.4 % and 20 % respectively ( $P > 0.05$ ;  $\chi^2 = 0.188$ ). Purulent complications also prevailed in group 1: 4.5 % and 9.1 % respectively in the groups ( $P > 0.05$ ;  $\chi^2 = 1.861$ ). Mortality rates in the groups were approximately the same: 4.5 % and 4.1 % respectively ( $P > 0.05$ ;  $\chi^2 = 0.02$ ).

### **Conclusions**

In one-stage operations for CRC complicated by intestinal obstruction, the number of complications is less compared to two-stage ones. Statistical differences in the mortality rates are minimal.

When choosing a surgical approach in the treatment of CRC complicated by AIO preference should be given to one-stage surgery.

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**A. Nana, V. S. Ivanov**

*Scientific supervisor: Associate Professor of the Department S. A. Ivanov*

*Educational Establishment  
«Gomel State Medical University»  
Gomel, Republic of Belarus*

## **NASAL RECONSTRUCTION USING ALLOGENEIC CARTILAGE: PATIENT REPORTED COSMETIC AND FUNCTIONAL OUTCOMES**

### **Introduction**

Allogeneic cartilage is often used for facial reconstruction. This study was conducted to analyze the outcome of cartilage grafting. 72 patients underwent nasal reconstruction using allogeneic cartilage, 58 % were females and 42 % were males. The mean age was 65.9. Patients operated for nasal defect caused by carcinoma surgery (82 %), secondary defect following carcinoma treatment (14 %). The least causes were trauma (3 %) and rhinophyma (1 %). The defect size, depth and risk factors were noted. A cartilage graft (CAG) was manually formed from a biopreparation of a rib from a cadaveric donor directly during reconstruction. Nasal skin defects were eliminated by performing 5 types of flaps: frontal flap, nasolabial flap, puzzle flap, flap from nasal back skin and free style perforator flap. Complications were registered in the postoperative period in 8.3 % of patients. The results of treatment were based on cosmetic and functional outcomes. Acceptable cosmetic appearance was found in 92 % of patients, while 8 % had unacceptable cosmetic appearance. Functional outcome was acceptable in 90 % and unacceptable in 10 % of patients. Features of the study are discussed.

Reconstruction of the external nose in patients with acquired defects is aimed at restoring the appearance and ensuring normal function [1]. The elimination of external skin defects is most often performed using skin flaps from the cheeks and forehead [2, 3]. Cartilage implants or artificial materials are used to create a natural and stable shape and function of the nose. The disadvantages of artificial implants are the relative high cost, the risk of aseptic granuloma

formation and rejection [2]. Disadvantages of cartilage autotransplantation: limited material, additional surgical trauma in the donor area, an increase in the duration of the operation, involutive cartilage changes in elderly patients may prevent the formation of a graft [2].

Allogeneic rib is an effective and safe alternative to autogenous grafts, since it reduces problems and eliminates the need for postoperative hospitalization following rib harvest [4]. Cartilage tissue is devoid of antigenic activity. Costal cartilage can be obtained from cadaveric donors in sufficient volume to form the framework structures of the nose [1, 4]. The preparation of a biopreparation of costal cartilage does not require expensive reagents and equipment. The production of a graft from a biological product is performed in the same way as from autologous cartilage. Nevertheless, one can state a skeptical attitude towards plastic material from cadaveric donors. The number of publications about its use for nasal reconstruction is insignificant. The claimed benefits of cartilage grafts from cadaveric donors should be confirmed by the results of their use in clinical practice.

### ***Goal***

To analyze the immediate and long-term results of the reconstruction of the external nose (EN) using cartilage allografts (CAG).

### ***Material and methods of research***

The study included 72 patients presented with nasal defects, 42 were females (58 %) and 30 were males (42 %). The age ranking ranged from 40 being the youngest patient to 86 being the oldest patient. The mean age was 65.9. The age standard deviation was 10.18. The defect causes were various. The most common cause of nasal defects was carcinoma surgery for 59 (82 %) patients, the next cause was secondary defect following carcinoma treatment – 10 (14 %) patients. Then trauma – 2 (3 %) patients and rhinophyma – 1 (1 %) patient. The defect size comprised 1 subunit – 11 patients, 2 subunits – 45 patients and 3 subunits – 16 patients. The defect depth was divided into 3 categories: skin only – 7 patients, skin and muscle-fascial layer involvement – 22 patients and 43 patients had full-thickness defect. 46 % of patients (33 patients) had risk factors: Smoking accounted for 45 % of all risk factors, followed by radiation therapy (40 %), diabetes (9 %), leukemia (3 %) and postburn scar (3 %).

A cartilage graft (CAG) was manually formed from a biopreparation of a rib from a cadaveric donor directly during reconstruction. In 9 cases, CAG was used to give a natural shape to the dorsum of the nose, in 49 cases – to form the lost framework structures, in 14 cases, non-anatomical transplantation was performed in the region of the free edge of the nasal alar to prevent prolapse. The elimination of the nasal skin defect was performed with the following flaps: frontal flap was used in 31 cases, nasolabial flap – 12, puzzle flap – 21, flap from nasal back skin – 7, and free style perforator flap – 1.

### ***The results of the research and their discussion***

Complications were registered in the postoperative period in 6 (8.3 %) patients, including: partial necrosis of the skin flap – 4 (6 %), abscess – 1 (1 %). The frequency of complications associated with chronic hepatitis was 1 (1 %) of all patients. All complications occurred in patients with risk factors.

The average score for the overall appearance of the nose after reconstruction was 4.58 points + 0.09 standard error. Unacceptable scores (2 or 3 points) are noted in 6 (8 %) observations. The optimal result (5 points) was achieved in 51 (71 %) patients, the suboptimal result (4 points) was achieved in 15 (21 %) patients. Reasons for the unacceptable result: graft protrusion (1), formation of a secondary defect due to flap necrosis or abscess (4). The mean overall nasal function score was 4.69 points + 0.09 standard error. Unacceptable scores (2 or 3 points) marked in 7 (10 %) observations. The optimal result (5 points) was achieved in 60 (83 %) patients, the

suboptimal result (4 points) was achieved in 5 (7 %) patients. Reasons for the unacceptable result: difficulty in nasal breathing due to narrowing of the nasal opening (3), massive formation of mucous crusts (2), prolapse of the ala of the nose (1).

### **Conclusions**

Reconstruction of the external nose using allogeneic costal cartilage resulted in acceptable esthetic results in 66 (92 %) of patients and acceptable functional results in 65 (90 %) of patients. The use of allogeneic material allows to reduce the time of surgery, reduce surgical trauma and does not lead to an increase in the frequency of postoperative complications.

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