AN ALGORITHM FOR NURSING CARE OF A PATIENT PRIOR AND POST RHINOPLASTY

ALGORYTM OPIEKI PIELĘGNIARSKIEJ NAD PACJENTEM PRZED I PO OPERACJI KOREKCYJNEJ NOSA

Bogusław Antoszewski[1,2], Dorota Cyniak[2], Anna Kasielska-Trojan[1,2]

[1] Plastic, Reconstructive and Aesthetic Surgery Clinic, Institute of Surgery
  Medical University of Lodz, Poland
[2] Plastic, Reconstructive and Aesthetic Surgery Department
  University Hospital No.1 in Lodz, Poland

ABSTRACT

Aim. The aim of this paper was to obtain and analyze clinical nursing practices in dealing with patients operated for posttraumatic nose deformity.

Material and Methods. The survey was carried out among nurses from university hospitals who work with patients undergoing posttraumatic rhinoplasty. The examined nurses (n=66) were recruited from: Plastic, Reconstructive and Aesthetic Surgery Clinic (15 nurses from one hospital), Otolaryngology Department (26 nurses from three hospitals) and Cranio-Maxillofacial Surgery Clinic (25 nurses from two hospitals).

Results. The obtained data were critically assessed by plastic surgery specialists and an algorithm of nursing care for these patients was created. It was developed by analyzing knowledge and practices of the experienced nurses and recommendations of plastic surgeons.

Conclusion. We presented a simple algorithm for nursing care in patients undergoing posttraumatic rhinoplasty, which can be helpful in clinical practice and can be used for education purposes.

KEYWORDS: post-operative care, rhinoplasty, algorithm.

STRESZCZENIE

Cel. Celem pracy była analiza klinicznych praktyk pielęgniarskich stosowanych u pacjentów leczonych operacyjnie z powodu pourazowego zniekształcenia nosa.

Materiał i metody. Badanie zostało przeprowadzone wśród pielęgniarek z uniwersyteckich szpitali, uczestniczących w opiece nad pacjentami, u których wykonywana jest rhinoplastyka. Badane pielęgniarki (n = 66) były rekrutowane z: Kliniki Chirurgii Plastycznej, Rekonstrukcyjnej i Estetycznej (15 pielęgniarek z jednego szpitala), Oddziału Otolaryngologii (26 pielęgniarek z trzech szpitali) oraz Kliniki Chirurgii Szczękowo-Twarzowej (25 pielęgniarek z dwóch szpitali).

Wyniki. Uzyskane dane zostały poddane ocenie przez specjalistów z dziedziny chirurgii plastycznej, co pozwoliło opracować algorytm opieki nad pacjentami po operacji nosa. Opierał się on na analizie wiedzy i praktyki klinicznej doświadczonych pielęgniarek oraz zaleceń lekarskich.

Wnioski. W pracy zaprezentowano algorytm opieki pielęgniarskiej nad pacjentem poddawanym zabiegowi rhinoplastyki, który może być pomocny w praktyce klinicznej i wykorzystany do celów edukacyjnych.

SŁOWA KLUCZOWE: opieka pooperacyjna, rhinoplastyka, algorytm.

Introduction

The nose, being the most prominent and central structure of the face, influences its appearance [1, 2]. As the nose attracts an observer's attention any deformities can be easily noticed and are often commented on [3]. In some people, especially in those with severe deformity, emotional distress may occur. Moreover, apart from an aesthetic aspect, nose deformity can cause breathing disturbances with all possible consequences such as frequent infections of the upper respiratory tract, sinusitis and headaches [4, 5].

An aesthetic and functional aspect of nasal deformity makes rhinoplasty one of the most commonly performed procedures in plastic surgery clinics. The aim of these operations is to correct or, in posttraumatic deformities, restore the nose's function and correct its appearance by improving its shape and symmetry. It is a challenge, even for an experienced surgeon, to obtain a satisfactory rhinoplasty result and such operations require appropriate pre – operative planning and postoperative care. Nursing care plays a very important role in successful treatment of pa-

tients with nose deformity. In the light of contemporary nursing practices and existing trends a great importance is ascribed to the optimization of the care quality. Nurses provide care according to the procedures developed on the basis of their experience in dealing with patients.

According to a systematic review concerning the effect of nursing practice guidelines, the use of such procedures was found to be effective in improving the accuracy of nursing records and the outcome of nursing activities such as a decrease in the incidence of complications [6]. Moreover, clinical practice guidelines reduce inappropriate variations in practice, promote the quality of care and enable healthcare professionals to explain the rationale underlying their interventions [7, 8]. Based on the literature review, Park and Park developed nursing practice guidelines to address the pre – and postoperative care of gastric cancer patients in a rapid and systematic way. They highlighted the fact that the presented guidelines may improve the quality of nursing care and may also be used for education purposes for both the students of nursing and novice nurses in the pre – and postoperative nursing care of gastric cancer patients [9]. Algorithms seem to be the best form of clinical guidelines as they can be used easily by novices as well as experts and they show simple diagrams for the decision making process [10]. Nursing algorithms make it possible to plan and implement the optimal patient care and may ensure that it is provided in a correct, logical order. As a result, a nurse is able to control her work on each stage and, if necessary, make an appropriate correction.

The aim of this paper was to obtain and analyze clinical nursing practices in dealing with patients operated for posttraumatic nose deformity. The obtained data were critically assessed by plastic surgery specialists and an algorithm of nursing care for these patients was created.

Methods

The survey was carried out among nurses from university hospitals who worked with patients undergoing posttraumatic rhinoplasty. The examined nurses (n=66) were recruited from: the Plastic, Reconstructive and Aesthetic Surgery Clinic (15 nurses from one hospital), the Otolaryngology Department (26 nurses from three hospitals) and the Cranio-Maxillofacial Surgery Clinic (25 nurses from two hospitals). Posttraumatic rhinoplasty is a common procedure in these hospitals, however, different techniques may be used in particular departments, e.g. osteotomies are more often performed

in the Plastic Surgery Clinic while septoplasty without osteotomy – in Otolaryngology Clinics. The study group consisted mostly of women (n = 65) and one men. The mean age of the participants was 44 ± 4 years and the mean value of their clinical nursing experience was 24 ± 4 years. Demographic data of the nurses from the chosen Clinics are presented in **Table 1**. The questionnaire was prepared by the authors and contained questions related to the participants' demographic data, clinical experience and practice in dealing with patients prior to and post rhinoplasty. The data were analyzed in order to detect any changes in the nursing process among different clinics. Finally, the results were analyzed and discussed by the group of specialists (the nurses and surgeons), the collaborative consensus and an algorithm was presented.

Statistical analysis

The statistical comparison between the respondents' answers was made using the chi-square test, while the age and length of clinical experience were compared with ANOVA variation analysis. The data on the frequency of monitoring in post-op period were analyzed with the Kruskal-Wallis test due to the disturbances in the normal distribution. The normality of the distribution was checked with the Kolomogorov-Smirnov test. The level of significance $p < 0.05$ was accepted.

Results

The nurses from analyzed Departments differed significantly in many respects: age, clinical experience and education, however, the mean length of their clinical practice was more than 20 years ($p < 0.05$, **Table 1**).

Table 1. The studied group characteristics and statistical comparison between the departments

	Otolaryngology n=26	Cranio-Maxillo-facial Surgery n=25	Plastic Surgery n=15	p
Sex				
Female	100%	96%	100%	
Male	0%	4%	0%	
Age	46 ± 6	41 ± 9	44 ± 4	0.0430
Length of clinical experience	25 ± 6	20 ± 10	23 ± 4	0.0478
Education				0.0197
Secondary	80.8%	36%	46.7%	
Incomplete higher	3.8%	28%	20%	
Higher	15.4%	36%	33.3%	

Source: author's own research

Pre-operative nursing care practices were similar among the examined nurses in the following aspects: measuring basic life parameters, taking nursing history, informing the patient about the ward's topography, informing about fasting on operation day and about postoperative discomfort connected with the presence of the gauze packing in the nose. The differences were related to the type of nursing documentation and asking a patient about his/her anxiety connected with the procedure (**Table 2**).

Table 2. Pre-operation nursing care practices and statistical comparison between the departments

	Otolaryngology	Cranio-Maxillofacial Surgery	Plastic Surgery	p
	n=26	n=25	n=15	n=66
Nursing documentation include:				
Nursing individual history	100%	100%	100%	-
Body temperature charts	100%	100%	100%	-
Pain assessment and treatment card	42.3%	12%	100%	0.000
Intravenous catheters observation card	100%	60%	100%	0.000
On admission to the ward patient's blood pressure, heart rate and body temperature are measured by the nurse:				
No	7.7%	0%	0%	0.203
Rather yes	11.5%	4%	0%	
Definitely yes	80.8%	96%	100%	
On admission to the ward the nurse takes history about patient's diseases, medications and allergies:				
No	0%	0%	0%	0.205
Rather yes	7.7%	0%	0%	
Definitely yes	92.3%	100%	100%	
On admission to the ward the nurse acknowledges a patient with the ward's topography:				
No	0%	0%	0%	0.293
Rather yes	15.4%	12%	0%	
Definitely yes	84.6%	88%	100%	
On admission to the ward the nurse informs a patient that during the day, when operation is planned, he cannot eat and drink without MD's permission:				
No	3.8%	0%	0%	0.603
Rather yes	7.7%	4%	13.3%	
Definitely yes	88.5%	96%	86.7%	
Before operation the nurse informs a patient about postoperative discomfort connected with the presence of the gauze packing in the nose:				
No	3.8%	3%	13.3%	0.184
Rather yes	30.8%	3%	13.3%	
Definitely yes	65.4%	84%	73.3%	

Before operation the nurse asks a patient about his anxiety connected with the procedure:				
No	7.7%	8%	0%	0.032
Rather yes	80.8%	52%	86.7%	
Definitely yes	11.5%	40%	13.3%	

Source: author's own research

Postoperative nursing care practices differed among the nurses from examined departments in many ways. The nurses practicing in the Plastic Surgery Clinic more frequently obtained information from MDs about the patient's general health condition after operation and filled in the observation chart. Additionally, more often than the nurses from Otolaryngology and the Cranio-Maxillofacial Surgery Clinic, they evaluated and reported patient's pain. The mean time intervals between patient's basic life parameters monitoring by a nurse in the postoperative period varied between the Wards ($p = 0.0007$). The frequency of monitoring was the lowest in the Otolaryngology Clinic (45 ± 34 min), but the highest in the Plastic Surgery Clinic (16 ± 4 min). Moreover, nurses in the Plastic Surgery Clinic observed the patients' eyelids for possible oedema and hematoma and put cold dressings on the patients' eyelids to prevent or reduce these symptoms (**Table 3**).

Table 3. Postoperative nursing care practices and statistical comparison between the departments

	Otolaryngology	Cranio-Maxillofacial Surgery	Plastic Surgery	p
	n=26	n=25	n=15	n=66
Before transferring a patient from the operating theatre the nurse gains information from MDs about his/her general health condition:				
No	7.7%	0%	0%	0.000
Rather yes	61.5%	8%	0%	
Definitely yes	30.8%	92%	100%	
Just after transferring a patient to the ward, the nurse fills in the observation card:				
No	0%	12%	0%	0.005
Rather yes	34.6%	8%	0%	
Definitely yes	65.4%	80%	100%	
In the postoperative period patients' basic life parameters are monitored with the frequency [min. mean±SD]				
	45 ± 34	27 ± 19	16 ± 4	0.001
In the postoperative period the nurse assesses and reports patient's pain:				
No	30.7%	44%	0%	0.035
Rather yes	26.9%	16%	6.7%	
Definitely yes	42.3%	40%	93.3%	

The external dressing placed under the nose is changed by the nurse with the frequency:			
<20 min	3.8%	0%	6.7%
20-40 min	7.7%	12%	0%	0.067
40-60 min	11.5%	0%	6.7%
60-90 min	23.1%	4%	0%
>90 min	53.8%	84%	86.7%

In the postoperative period, the nurse observes patients' eyelids for edema and hematoma:			
No	57.7%	16%	0%	0.000
I do not know	7.7%	4%	0%
Rather yes	30.8%	40%	80%
Definitely yes	3.8%	40%	20%

In the postoperative period the nurse puts cold dressings on patients eyelids to prevent/reduce edema:			
No	76.9%	60%	6.7%
I do not know	15.4%	4%	0%	0.000
Rather yes	7.7%	8%	86.7%
Definitely yes	0%	28%	6.7%

Source: author's own research

The examined nurses were also asked about the most common complaints reported by the patients in the postoperative period. Regardless of the Ward, the first most common were breathing disturbances connected with the gauze packing in the nose. The second complaint was different in each Ward, namely oedema in oral mucosa was observed on the Plastic Surgery and Otolaryngology Ward and pain in the Cranio-Maxillofacial Surgery Clinic (p = 0.033). As the third cause of postoperative discomfort the following symptoms were reported: pain (Otolaryngology), oedema in oral mucosa (Cranio-Maxillofacial Surgery) and sore throat (Plastic Surgery) (p = 0.011).

Nursing care practices before the patients' discharge from hospital were similar on all Wards to the extent of informing patients on the necessity of self-care and educating them about self-care and the forms and materials used to provide it. It was also found that all nurses informed a patient about possible dangers and methods of protection of the operated area (**Table 4**).

Table 4. Nursing care practices before patients' discharge from the hospital and statistical comparison between the departments

	Otolaryngo-logy	Cranio-Maxillofacial Surgery	Plastic Surgery	p
	n=26	n=25	n=15	n=66

In the nurses' opinion obtaining a satisfactory effect of rhinoplasty determines patients' psychical comfort and motivation to follow doctor's instructions:				
No	11.5%	0%	0%	0.002
I do not know	7.7%	0%	0%
Rather yes	50%	24%	6.7%
Definitely yes	30.8%	76%	93.3%

The nurse informs a patient that after discharge he/she will have to start self-care and educates him/her about it:				
No	7.7%	8%	0%	0.125
I do not know	11.5%	0%	0%
Rather yes	50%	40%	73.3%
Definitely yes	30.8%	52%	26.7%

| The nurse uses the following forms/materials to educate a patient about the self-care after discharge:				
Individual conversation	69.2%	60%	66.7%
Specialist literature (articles. books)	0%	0%	6.7%	0.326
Brochures. booklets	0%	8%	0%
All mentioned above	30.8%	32%	26.7%

Before discharge the nurse informs a patient about dangers and methods of protection of the operated area:				
No	0%	0%	0%	0.025
Rather yes	61.5%	36%	20%
Definitely yes	38.5%	64%	80%

Source: author's own research

On the basis of the obtained data on the most common fields of nursing care practices in patients undergoing rhinoplasty and after discussing the issue with plastic surgery specialists, an algorithm of such care was created and presented (**Figure 1**).
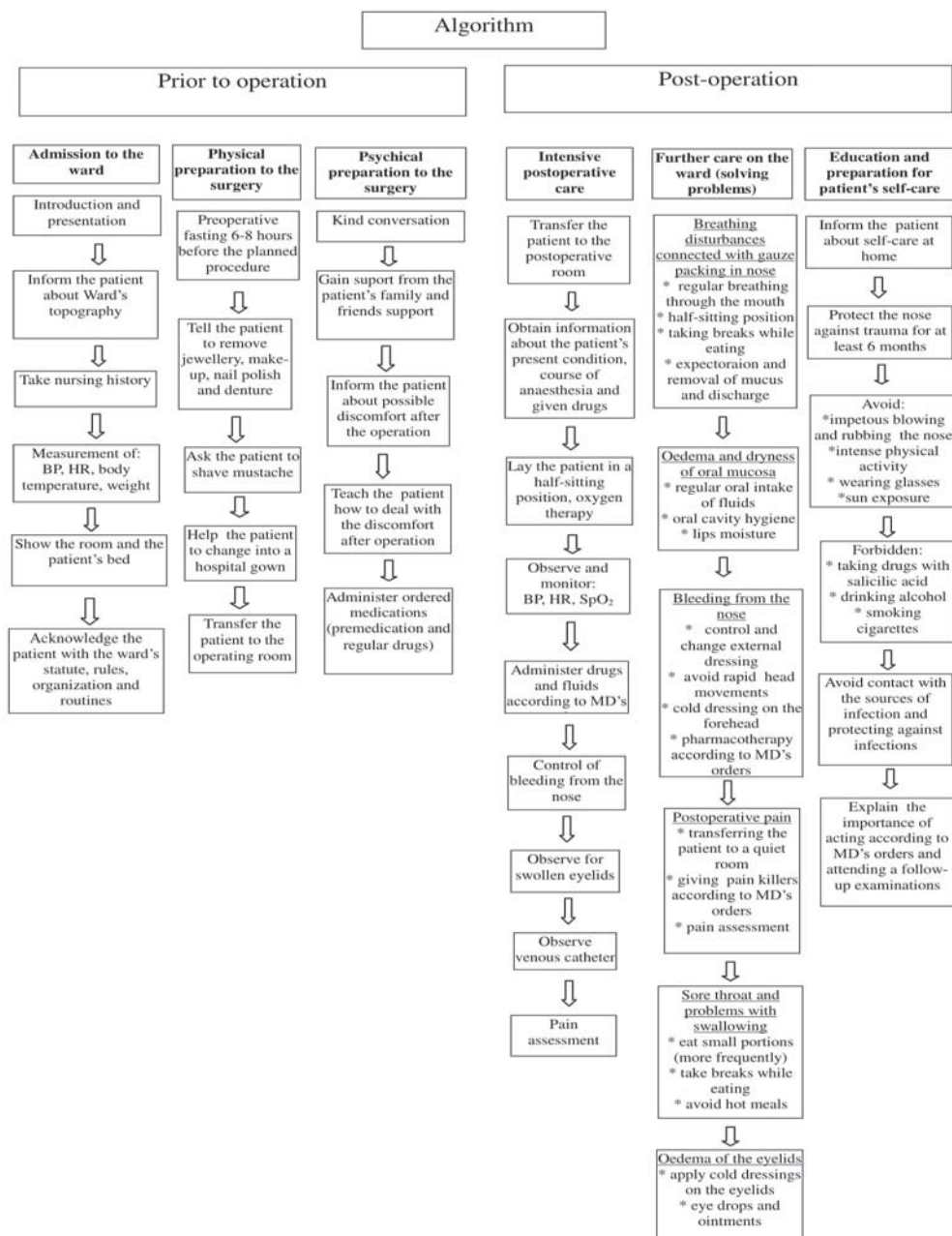
Figure 1. The algorithm of nursing care for patients undergoing rhinoplasty

Source: author's own research

Discussion

In this study, we examined nursing practices and the knowledge about nursing care in patients with post-traumatic nose deformity. On the basis of the collected data and the collaborative consensus, the algorithm for nursing care for such patients was developed. It included recommendations concerning: the preoperative care – admission and preparation prior to the surgery and the postoperative care, including intensive postoperative care, further postoperative care and discharge care categories. As Park and Park emphasized, each recommendation, concerning not only the treatment but also nursing care, should be made on the basis of the evidence from randomly controlled experimental research or systematic clinical trials. However, the authors observed the lack of the research evidence concerning the pre- and postoperative nursing care in case of gastric cancer patients. They made their recommendations on the basis of the literature review and concluded that more clinical research was required before making further attempts to develop evidence-based nursing practice guidelines [9]. The same methodological problem was encountered in our research that aimed at preparing an algorithm for nursing care for a patient

prior to and post rhinoplasty. We have not found any recommendations for nursing care of such patients in literature. Nurses responsible for the care process from the patient's admission and preparation to the surgery, to discharge of a well-educated patient from the ward, face many problems and difficulties. One of them is the lack of guidelines or algorithms concerning care. This could help to maintain a basic standard of nursing care and may ensure that patients are given optimal and professional care. Moreover, Park and Park found in their study that pain management was recognized by the nurses as rather ineffective and inapplicable [9]. This could result from the fact that clinical nurses lacked the knowledge of pain assessment and possible interventions, do not recognize the importance of pain management, and/or do not have the skill of pain management [11, 12, 13]. The authors found that it was necessary to introduce strategies to improve knowledge about pain assessment and interventions before introducing their guidelines in clinical practice. Pain assessment and management is also an important part of our postoperative care algorithm.

The algorithm developed in the present study covers the most common aspects of nursing care in patients undergoing rhinoplasty prior to and after surgery. It may be useful and helpful to group the nursing practices systematically according to guidelines. As it was observed by some authors, such algorithms provide important information and can be used as teaching and training materials in nursing practice [9]. Currently, most of the diagnostic and treatment processes are based on specific guidelines and algorithms. However, extensive clinical practice guidelines for various nursing problems should be developed in the near future.

Limitations

It is worth stressing that our algorithm has some limitations although it is based on nursing practices of the experienced nurses from three different wards in hospitals caring for the patients suffering from the same condition (posttraumatic nose deformity). The examined nurses represented only one Polish city, so the applicability of this algorithm may be limited, as in other centers different practices may be applied. It would be valuable if other hospitals presented their nursing practices for pre – and postoperative care for patients undergoing rhinoplasty. It would enable to share knowledge and experience, and create a universal algorithm for nursing care.

Conclusion

In conclusion, in this study we presented a simple algorithm for nursing care in patients undergoing posttraumatic rhinoplasty, which can be helpful in clinical practice and can be used for education purposes. It was developed by analyzing knowledge and practices of experienced nurses and recommendations of plastic surgeons. Sharing experience among nurses from different clinical settings may enable to develop universal guidelines for patients undergoing different surgical procedures in the future. Such guidelines should include surgeons' recommendations and result from cooperation between the nurses and the surgeons.

References

1. Antoszewski B, Sitek A, Kasielska A, Kruk-Jeromin J. Anthropometric evaluation of the results of posttraumatic rhinoplasty. Pol J Cosmetol. 2008; 11: 47–55.
2. Gorgulla HT, Jung U, Jung H. Rhinophyma in literature and the arts. Facial Plast Surg. 1998; 14: 229–39.
3. Pisera P, Antoszewski B, Fijałkowska M, Kasielska A, Iljin A. Long-term aesthetic results of rhinoplasty in congenital nose deformities--comparison of surgeon's and patient's evaluation. Otolaryngol Pol. 2012; 66: 280–4.
4. Antoszewski B, Sitek A, Kruk- Jeromin J. Analysis of nose growth. Otolaryngol Pol. 2005; 59: 925–31.
5. Krzeski A.: Wykłady z chirurgii nosa. Via Medica, Gdańsk 2005.
6. Thomas LH, McColl E, Cullum N, Rousseau N, Soutter J, Steen N. Effect of clinical guidelines in nursing, midwifery, and the therapies: a systematic review of evaluations. Qual Health Care. 1998; 7: 183–191.
7. Jacox A. Addressing variations in nursing practice/technology through clinical practice guidelines methods. Nurs Econ. 1993; 11: 170–172.
8. Park M. Development of evidence based nursing practice guideline document model for electronic distribution. J Korean Soc Med Inform. 2004; 10: 147–159.
9. Park MO, Park HA. Development of a nursing practice guideline for pre and post-operative care of gastric cancer patients. Healthc Inform Res. 2010; 16: 215–23.
10. Courtney M.: Evidence for nursing practice. Marrickville, N.S.W. Elsevier Australia, 2005.
11. Kim SJ, Hong SH, Sung LN, Kim ES, Hong EH, Yeum MR et. al. Effects of a systematic pain management method used by a group of nurses on pain management of oncology patients. J Korean Acad Adult Nurs. 1997; 9: 148–161.
12. Park YS, Shin YH. Nurses' knowledge on pain management. J Korean Acad Adult Nurs. 1994; 6: 299–307.
13. Suh SR, Suh BD, Lee HJ. Nurses' knowledge and attitudes toward assessment and intervention of patients with pain. J Korean Acad Adult Nurs. 1995; 7: 61–70.

Address for correspondence:
Anna Kasielska-Trojan
Kopcińskiego 22
90-153 Łódź
phone: (0048 42) 6776742
e- mail: annakas@toya.net.pl
Fax: (0048 42) 6776749
Plastic, Reconstructive and Aesthetic Surgery Department,
University Hospital No.1 in Lodz