

Patient Information and Patient Preparation in Orthognathic Surgery: A Medical Audit Study

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Summary

In 110 patients who had undergone various kinds of orthognathic surgery, patient satisfaction was measured by means of a written questionnaire. Ninety-four percent expressed satisfaction, both with regard to total preparation and the final outcome of the surgical procedure itself.

Twenty to forty percent of the patients, however, were not properly informed about postoperative complications. On the basis of the deficiencies, indicated in the questionnaire, appropriate written information was developed. In the near future the effect of the recently added information will be investigated.

Key-Words: Patient information; Patient preparation; Orthognathic surgery; Medical audit; Patient satisfaction.

Introduction

During recent years, evaluation of medical care by means of medical audit has become an accepted procedure for quality assurance in Dutch general hospitals (Casparie 1975; Reerink 1978).

In this procedure the practice of medical care is measured and compared with pre-established criteria, and, if necessary, changes are proposed and implemented. These changes include improvements in the health care system, in health personnel behaviour and in the behaviour of patients.

Finally, these improvements must be evaluated to investigate the effects of those changes. Registration of what has actually happened is an important step in this process and, under some conditions, the opinion of the patient about a medical intervention can be used as a parameter for assessing the quality of that intervention.

In surgical correction of oro-facial deformities, patient satisfaction is a major goal of treatment. Patients must not only be satisfied with the results

of surgery, or the *outcome* of the procedure. Especially in this type of highly elective surgery, is it necessary that the patients are well-informed and prepared, i.e. satisfied with the *process* of the procedure.

For a complete assessment of the quality of care for those patients an inquiry has to be made concerning *both* information and preparation and the results of the operation.

Patients and Methods

The operating team first established the criteria and standards for patients' satisfaction after corrective surgery (Tab. 1). These were part of a larger set of criteria which covered all aspects of orthognathic surgery (mortality, morbidity, negative side-effects and costs).

Table 1 Criteria and standards for patients' satisfaction after corrective orthognathic surgery in the De Weezenlanden Hospital

Correct preparation and information of patients	100 %
Correct treatment in the hospital	75 %
Facial/functional improvement accepted	75 %

Secondly, questionnaires were sent to 110 patients who had undergone various types of orthognathic operations at least one year before the start of the evaluation procedure (Tab. 2).

Table 2 Types of operations for orthognathic surgery between 1973 and 1977 in the De Weezenlanden Hospital

Osteotomy of the maxilla	48
Osteotomy of the mandible	86
Combinations: maxilla/mandible	24

Table 3 Questions related to the process

<i>Question 1</i>			
Who referred you for possible oral/maxillo-facial surgery?			
<i>Answer</i>	family doctor		18
	dentist		64
	specialist		14
	don't know		4
<i>Question 2</i>			
Who drew your attention to the possibilities of corrective jaw surgery?			
<i>Answer</i>	dentist		35
	(treating) oral surgeon		41
	family		2
	specialist		8
	self		10
<i>Question 3</i>			
In your opinion, was there sufficient discussion and explanation concerning the proposed operation?			
<i>Answer</i>	yes		94
	no		6
<i>Question 4</i>			
Did you receive sufficient information concerning:			
	yes	no	don't know
operating time?	72	28	—
the time that splints had to be worn?	78	11	11
the duration of intermaxillary fixation?	78	11	11
dietary problems during that time?	74	22	4
weight loss?	56	40	4
hospitalization time (length of stay)?	95	5	—
time of absenteeism from work?	64	34	2
<i>Question 5</i>			
Did you receive sufficient information about the following negative side-effects?			
	yes	no	don't know
transient or permanent anaesthesia of the lip?	66	32	2
damage to the dentition?	48	45	7
restricted jaw movements?	57	39	4
<i>Question 6</i>			
Were the dietary instructions clear?			
	84	10	6
Did you use those instructions at home?			
	78	14	8
Did you dislike the diet in the hospital?			
	33	62	5

Table 4 Questions related to the outcome (result)

<i>Question 7</i>			
What is your opinion about the end result? Are you:			
	very content?		62
	content?		8
	moderately content?		25
	dissatisfied?		3
	very dissatisfied?		—
	do not know?		—
<i>Question 8</i>			
If dissatisfied, what is your major complaint?			
	trauma to the dentition		6
	permanent hypoaesthesia		14
<i>Question 9</i>			
What is your opinion about your face after the operation?			
<i>Answer</i>	improved		89
	unaltered		8
	made worse		3
	don't know		—
		yes	no
If improved, did you gain in selfconfidence?			
		63	17
If not improved, did you experience a loss in selfconfidence?			
		1	2
<i>Question 10</i>			
What is your opinion about your ability to speak post-operatively?			
	improved		20
	unaltered		66
	made worse		13
	don't know		1
<i>Question 11</i>			
What is your opinion about your masticatory function?			
	improved		39
	unaltered		47
	made worse		14
<i>Question 12</i>			
Would you recommend the operation to others?			
	yes	no	don't know
	87	8	5
<i>Question 13</i>			
Did you regret having been operated upon?			
	yes	no	don't know
	3	94	3

The questionnaires were signed and mailed by the hospital audit committee, and not by the surgeons, to encourage an honest answer to the questions. There were thirteen questions, six regarding the process of the procedure, seven related to the final outcome of the surgery. At the end of the questionnaire patients were asked to give their opinion about the procedure.

Results

The response rate was 100/110 (90 %) and can be regarded as an expression of the emotional involvement of the patients in this type of surgery. Tables 3 and 4 present the questions and the answers.

Discussion

Surgical correction of various types of oro-facial deformities is a widely accepted procedure. During the last two decades especially considerable progress in resolving technical problems has been made. Many standard procedures have been developed and their long-term results have been published recently (e.g. *Freihofer* 1973, 1976, 1977 a, 1977 b; *Guernsey* 1974; *Stoker and Epker* 1974; *Willmar* 1974; *Freihofer and Petresevic* 1975; *Bell and McBride* 1977; *Zisser* 1977; *Schendel et al.* 1978; *Peppersack and Chausse* 1978; *Hovinga et al.* 1979).

With increasing knowledge and skills, the number of indications for this type of surgery have been enlarged. It is obvious that for this surgery, where rather complicated operations are proposed, patient information should be optimal and should include all potential hazards and risks of the procedure.

Negative side-effects of surgery must not be ignored. Serious attempts (*Peterson and Topazian* 1974, 1976) have been made to evaluate pre-operatively the patients' motivation and attitude towards this type of corrective surgery and some retrospective studies deal with psychosocial effects of orthognathic surgery (*Crowell et al.* 1970; *Laufer et al.* 1976; *Jensen* 1978), but generally accepted and mutually comparable standards for pre- and postoperative evaluation are lacking. Preoperative information must meet stringent criteria, therefore in retrospective questionnaires

answers must be, ideally, 100 % positive, especially when the operations were proposed by the surgeons, as was the case in 40 % of our patients. In general 94 % of the patients were satisfied both with the process and the results of surgery. Six patients were dissatisfied with both aspects of the procedure.

In detail, however, our study revealed several points of dissatisfaction. In spite of serious attempts to inform and prepare the patients as completely as possible, twenty to forty percent were not properly informed about the following points:

general anaesthesia	(20 %)
postoperative diet	(22 %)
weight loss	(40 %)
absenteeism from work	(34 %)
loss of sensibility	(32 %)
possible damage to dentition	(45 %)

In relation to this, patients' remarks showed that information should also be given about:

operating time; general anaesthesia and the immediate postoperative problems (vomiting, pain, blood loss, intensive care nursing); the time that splints have to be worn; the duration of intermaxillary fixation; dietary problems and weight loss; hospitalization time; time of absenteeism from work; transient or permanent loss of facial sensation; damage to dentition; restricted jaw movements/joint dysfunction.

As already pointed out in the literature on this type of elective surgery (*Quelette* 1978), communication must be established between physician and patient.

Real communication means a personal relationship, therefore patient explanation, preparation and surgery should be done by the same person(s). When the operations are performed by two surgeons assisting each other, one of them must play the dominant role in the communication process. In our questionnaire some patients expressed their disappointment at being treated by several physicians.

Problems in individual cases of patient preparation for surgery can only be solved by very careful patient-interviewing, preferably during multiple visits in the planning period. Only in extreme cases (in our experience one or two times among 300 patients) was the help of psychologists or psychiatrists needed.

Conclusion

Quality assessment of medical care, as we have done by interviewing our patients, must include quality improvement. Therefore it is necessary to implement changes based on the deficiencies found in our study. To improve the information and communication procedure, appropriately written information, based on the findings in our study is given to the patient. Of course, as before, spoken information is given as well, with emphasis on the negative side-effects of surgery.

As part of the on-going medical audit procedure, described in the introduction, in the near future the effect of the written information will be investigated by an identical questionnaire.

References

- Bell, W. H., K. L. McBride: Correction of the long face syndrome by le Fort I osteotomy. *Oral Surg.* 44 (1977) 493
- Casparie, A. F.: Praktische toepassing van Medical Audit. *Ned. T. Geneeskunde* 119 (1975) 667
- Crowell, N. T., H. J. Sazima, S. T. Elder: Survey of patients' attitude after surgical correction of prognathism. *J. Oral Surg.* 28 (1970) 818
- Freihofer, H. P.: Results after midface osteotomies. *J. max. fac. Surg.* 1 (1973) 30
- Freihofer, H. P.: The lip profile after correction of retro-maxillism in cleft and non-cleft patients. *J. max. fac. Surg.* 4 (1976) 136
- Freihofer, H. P.: Changes in nasal profile after maxillary advancement in cleft and non-cleft patients. *J. max. fac. Surg.* 5 (1977a) 20
- Freihofer, H. P.: Results of osteotomies of the facial skeleton in adolescence. *J. max. fac. Surg.* 5 (1977b) 267
- Freihofer, H. P., Petrescovic: Late results after advancement of the mandible. *J. max. fac. Surg.* 3 (1975) 20
- Guernsey, L. H.: Stability of treatment results in class II malocclusion corrected by full mandibular advancement surgery. *Oral Surg.* 37 (1974) 668
- Hohl, T., B. N. Epker: Macrogenia; a study of treatment with surgical recommendations. *Oral Surg.* 41 (1976) 545
- Hovinga, J., E. R. Kraal, L. A. M. Roorda: A follow-up of osteotomies for dysgnathia. *J. max. fac. Surg.* 7 (1979) 271
- Jensen, H. J.: The psychosocial dimensions of oral and maxillo-facial surgery. *J. Oral Surg.* 36 (1978) 447
- Lauffer, B., D. Glick, D. Gutman, A. Sharon: Patient motivation and response to surgical correction of prognathism. *Oral Surg.* 41 (1976) 309
- Lines, P. A., E. W. Steinhäuser: Soft tissue changes in relationship to movement of hard structures in orthognathic surgery. *J. Oral Surg.* 32 (1974) 891
- Pepersack, W. J., J. M. Chausse: Longterm follow-up of the sagittal splitting technique for correction of mandibular prognathism. *J. max. fac. Surg.* 6 (1978) 117
- Peterson, L. J., R. G. Topazian: The preoperative interviewing and psychological evaluation of the orthognathic surgery patient. *J. Oral Surg.* 32 (1974) 583
- Peterson, L. J., R. G. Topazian: Psychological considerations in corrective maxillary and midfacial surgery. *J. Oral Surg.* 34 (1976) 157
- Quellette, P. L.: Psychological ramifications of facial change in relation to orthodontic treatment and orthognathic surgery. *J. Oral Surg.* 36 (1978) 787
- Reerink, E.: Beurteilung der Qualität medizinischer Leistungen. Methodik des Vorgehens in den Niederlanden. *Münch. Med. Wochenschr.* 125 (1978) 593
- Schendel, S. A., L. M. Wolford, B. N. Epker: Mandibular deficiency syndrome III. *Oral Surg.* 45 (1978) 364
- Stoker, N. G., B. N. Epker: The posterior maxillary osteotomy; a retrospective study of treatment results. *Int. J. Oral Surg.* 3 (1974) 153
- Willmar, K.: On le Fort I osteotomy. *Scand. J. Plast. Reconstr. Surg. Suppl.* 12 (1974)
- Zisser, G.: Nachkontrollen und Ergebnisse Kieferorthopädischer Operationen (1964-1976). *Dtsch. Z. Mund-Kiefer- und Gesichtschir.* 1 (1977) 103

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