

Association of attachment anxiety and satisfaction with nasal surgery*

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SUMMARY

Aim: To investigate the possible contribution of attachment anxiety (AA) to satisfaction with the outcome of surgery.

Methods: Sixty-three patients with chronic sinusitis who were scheduled for FESS with septoplasty were asked to complete a panel of self-report measures assessing attachment style, quality of life, mental health, and degree of facial pain and nasal obstruction. The questionnaires were filled out two weeks before surgery and one month after surgery. One surgeon performed all procedures.

Results: Participants were divided into two groups according to AA scores: high anxiety in attachment and low anxiety in attachment. Postoperatively, the group as a whole showed significant improvement in quality of life, positive thoughts about their body and improvement in pain and sinus congestion. The high AA group reported a significantly lower quality of life than the low AA group. There was an inverse correlation between AA and well-being before and after surgery, and between AA and pain amelioration after surgery. A positive correlation was noted between AA and mental distress.

Conclusions: Even a basic personality factor such as AA can significantly impact patient satisfaction with surgery outcome. Surgeons performing surgery should bear in mind that success is partly related to the patient's mental state and personality.

Key words: anxiety, attachment, sinus surgery, satisfaction

INTRODUCTION

The success of surgery may be objectively assessed by physical examination, imaging scans, and laboratory tests. However, the subjective satisfaction of patients with the outcome is not less important. Indeed, it is not uncommon for the surgeon to be pleased with the surgical results while the patient is quite unhappy. It is common knowledge that patients' personalities influence the subjective result of medical treatment and surgical results. To the best of our knowledge the effect of personality on the subjective nasal surgical results (non cosmetic) has not been assessed.

Attachment anxiety (AA) is a common personality component. Research in adults is increasingly focusing on the protective role of attachment security in coping with life's adversities^(1,2). Bowlby⁽³⁻⁵⁾ theorized that an individual's early social interactions with significant others ("attachment figures") are internalized in the form of conscious and unconscious representations ("internal working models") of self and relationship partners. Relationship partners who are available and supportive in times of need foster the development of a sense of attachment security, providing a foundation for good mental health⁽³⁻⁶⁾. However, when attachment figures are rejecting or unavailable in times of need, security is undermined, and the likelihood of later emo-

tional difficulties and maladjustment increases⁽⁷⁾. By adulthood, the systematic pattern of relational expectations, emotions, and behaviors that result from a particular attachment history form the individual's "attachment style". Studies show that attachment style can be measured in terms of two orthogonal dimensions, *anxiety* and *avoidance*⁽⁸⁻¹⁰⁾. People who score high on AA tend to appraise threats as extreme and their own coping resources as deficient; they exaggerate and ruminate on threats and report high levels of distress during and after stressful events⁽¹¹⁻¹⁵⁾. A person's position on the attachment avoidance scale indicates the extent to which he or she distrusts other's goodwill, strives to maintain behavioral independence and emotional distance from partners, and relies on denial of attachment needs and suppression of attachment-related thoughts and emotions^(7,12-16). People who score low on both dimensions are said to have a secure attachment style⁽¹³⁻¹⁶⁾.

The ability to cope with medical problems and procedures has been found to be associated with the individual's attachment style^(17,18). Any surgery, including nasal surgery, may be perceived as a life-threatening situation because of the risks of the surgery per se and the anesthesia. The aim of the present study was to investigate the contribution of AA to patients' coping with nasal surgery and outcome satisfaction.

PATIENTS AND METHOD

Patients

The study protocol was approved by the ethics committee of Rabin Medical Center, and written consent was obtained from all participants.

The initial study sample consisted of 88 participants randomly selected from among patients who were scheduled for surgery for chronic sinusitis at the Nose and Sinus Institute between October 2005 and March 2006 and who voluntarily agreed to participate in the study. All underwent functional endoscopic sinus surgery (FESS) with septoplasty and partial conchotomy. All procedures were performed by the same surgeon (E.Y.). Sixty-three of the subjects completed all questionnaires and served as the study group.

Data were collected at three time points: two weeks prior to surgery (Time 1), two days after surgery (Time 2), and one month after surgery (Time 3).

All patients were examined endoscopically at times 1 and 3 and results were analysed. All patients had CT scan of the sinuses before surgery.

Instruments and Procedures

The Experiences in Close Relationships scale (ECR) ⁽¹⁰⁾ was used to identify attachment orientation. The 36-item ECR includes 18 items that tap the anxiety dimension (e.g., "I am often worried that my partner does not love me") and 18 that tap the avoidance dimension (e.g., "I am somewhat uncomfortable while being close to other people"). Ratings are made on a 7-point scale, ranging from not at all to very much. The ECR was administered before surgery (Time 1) only. Cronbach's alpha was 0.88 for the anxiety items and 0.80 for the avoidance items. No significant association was found between the two dimensional scores [$r(63) = -0.04$].

The Mental Health Inventory (MHI) ⁽¹⁹⁾ was used to assess patient mental health. The scale includes 38 statements representing states of psychological well-being which participants rate according to their applicability to themselves over the preceding month. Fourteen items are positive (e.g., "I feel relaxed and calm", "I enjoy the things that I do") and 24 are negative (e.g., "I feel depressed", "I feel tense") The MHI was administered before surgery (Time 1) and again one month after surgery (Time 3). Scores for well-being and mental distress were computed separately. Cronbach's alpha was 0.91 at Time 1 and 0.92 at Time 3 for the well-being items, and 0.89 and 0.90, respectively, for the mental distress items, indicating good interval consistency for both.

The Illness Perception Questionnaire (IPQ) ⁽²⁰⁾ was used to assess the patients' appraisal of the severity of their illness. For the present study, of the instrument's 25 items, we selected the 8 that pertain specifically to the outcome of surgery. The items were rated on a 10-point scale from *strongly disagree* to *strongly agree*. The IPQ was administered before surgery only (Time 1). Cronbach's alpha was 0.63.

The World Health Organization Quality Of Life Questionnaire, short version (QOL) ⁽²¹⁾ was used to assess the patients' appraisal of their quality of life. Each item is scored on a 5-point scale,

from "do not agree at all" to "absolutely agree". The QOL was administered before surgery (Time 1) and one month later (Time 3). Cronbach's alpha was 0.87 at Time 1 and 0.88 at Time 3.

The Body Investment Scale, brief version (BIS) ^(22,23) was used to assess the patients' emotional investment in their body. The BIS is divided into 3 subscales: feelings and thoughts about the body; body care; and comfort with physical touch. Each item is scored on a 5-point scale, from *strongly disagree* to *strongly agree*. The BIS was administered before surgery (Time 1) and one month later (Time 3). Cronbach's alpha for the 8 items of feelings and thoughts about the body was 0.84 at Time 1 and 0.88 at Time 3; for the 8 items on body care, 0.70 and 0.80, respectively; and for the 8 items on comfort with physical touch, 0.83 and 0.77, respectively.

The Pain and Nose Obstruction Questionnaire, was used to assess the patients' appraisal of their physical pain and nasal obstruction. The pain item was scored on a 9-point scale ranging from *none at all* to *unbearable*, and the obstruction item, on a 9-point scale ranging from *completely open* to *completely blocked*. This questionnaire was administered before surgery (Time 1), two days later (Time 2) and one month after surgery (Time 3). We did not calculate Cronbach's alpha because there was only one item for each factor.

The Rorschach Test ⁽²⁴⁾ was used to identify patients with alexithymia, as suggested by Acklin and Bernat ⁽²⁵⁾. Patients are presented with 10 ink blot images and asked to describe what they look like. The responses are assessed according to Exner's *Primer for Rorschach Interpretation* ⁽²⁶⁾. Alexithymia is characterized by a difficulty in distinguishing between physical states (fatigue, hunger) and mental states (anger, excitement) ⁽²⁷⁾. Owing to the high rate of alexithymia among people in chronic pain compared to the general population ⁽²⁸⁾, and the very subjective and hard-to-assess nature of pain, we sought to exclude patients with alexithymia from the analysis of the pain-related measures.

Statistical analysis

Differences in patient scores between Time 1 and Time 3, or Time 1 and Time 2 and Time 3, were analysed by t-test for paired samples. The minimal level of significance was $p < 0.05$.

RESULTS

The final study sample included 39 men and 24 women aged 18 to 68 years (average 41 years) of heterogeneous socioeconomic background. On the basis of the ECR scores, the participants were divided into 2 groups: high AA (higher than one SD from the average score) ($n = 9$) and low AA (lower than one SD from the average score) ($n = 9$). These groups were then compared for their responses on the remaining questionnaires.

For the whole sample of patients, self-reported quality of life improved significantly after surgery (Table 1). By attachment orientation, the patients with high AA reported a significantly lower quality of life before surgery ($M = 92.44$ vs $M = 98.74$) and after surgery than the patients with low AA ($M = 99.44$ vs $M = 111.67$, $p < 0.05$), while in the whole sample of patients'

Table 1. Mean scores on questionnaires before and after surgery: whole sample (t-test)

Variable	Before surgery mean (SD)	One month after surgery mean (SD)	T score	p value
Quality of life	98.74 (11.22)	101.67 (11.78)	-3.09	< 0.01
Feelings and thoughts towards body	25.01 (4.06)	25.73 (4.03)	-2.11	< 0.05
Pain	2.67 (2.13)	1.7 (1.18)	3.61	< 0.001
Nose obstruction	6.21 (2.50)	2.90 (2.11)	7.97	< 0.001

Table 2. Pearson's correlation between attachment anxiety and different variables: (- negative correlation, + positive correlation)

Variable	Pearson's correlation (r)	p value
Quality of life pre-surgery	-0.30	< 0.01
Quality of life post-surgery	-0.32	< 0.01
Comfort with touch pre-surgery	-0.29	< 0.01
Thoughts & feelings about body post-surgery	-0.21	< 0.05
Pain pre-surgery	+0.20	< 0.05
Appraisal of illness pre-surgery	-0.23	< 0.05
Psychological well-being pre-surgery	-0.30	< 0.01
Psychological well-being post-surgery	-0.44	< 0.001
Mental distress pre-surgery	+0.31	< 0.01
Mental distress post-surgery	+0.33	< 0.01

quality of life improved significantly ($t = -3.09$, $p < 0.01$). The improvement of patients with high AA was not significant ($t = -0.87$, $p = 0.41$). There was an inverse association between AA and appraisal of quality of life at Time 1 [$r(33) = -0.30$; $p < 0.01$] and Time 3 [$r(33) = -0.32$; $p < 0.01$] (Table 2).

For the whole sample of patients, there was a significant increase in positive thoughts about their bodies on the BIS after surgery (Table 1). There was no significant difference in pre- and postoperative scores on the other two BIS subscales, body care and comfort with physical touch. Analysis by attachment orientation revealed a negative correlation between AA and comfort with physical touch before surgery, and a negative correlation between AA and thoughts and feelings about the body after surgery [$r(33) = -0.21$; $p < 0.05$] which was not found before surgery (Table 2).

All patients reported a significant decrease in both pain and nasal obstruction after surgery (Table 1). There was a positive correlation between AA and pain before surgery [$r(33) = 0.20$; $p < 0.05$] (Table 2). When the 14 patients found to be alexithymic were excluded from the analysis, we found that patients with AA also reported minimal improvement after surgery [$r(33) = -0.32$; $p < 0.01$].

We noted a negative correlation between AA and illness appraisal of the outcome of surgery before surgery [$r(33) = -0.23$, $p < 0.05$]; a negative correlation between AA and psychological well-being both before and after surgery, and a positive correlation between AA and mental distress both before and after surgery (Table 2).

The endoscopic findings before and after surgery were similar in both groups ($p < 0.05$). CT sinus score was similar in both groups before surgery.

DISCUSSION

Our study shows that factors in the individual patient's personality can affect his or her subjective assessment of the results of nasal surgery. The study underscored the specific contribution of AA, a basic personality characteristic that has implications for various life domains^(4,8). Of the 63 patients who underwent FESS and septoplasty, 9 were found to have high AA. This means that 14.3% of the patients have some personality issues which, as we show, significantly affect subjective results of surgical outcome (according to Brennan et al.⁽¹⁰⁾ 16.1% of the general population present high AA which is very close to our findings). Although the sample as a whole reported subjective improvement in most of the parameters examined after surgery (quality of life, body investment, and pain and nasal obstruction), the subjects with high AA reported less improvement than the patients with low AA. (For example, quality of life of the whole group improved significantly ($p < 0.01$), while high AA did not – $p = 0.04$).

It is also noteworthy that before surgery, there was no association between AA and attitude towards the body, whereas one month later, we found that the higher the AA, the more negative the patient's attitude towards their bodies. We speculate that for patients with AA who need more attention, not only before but also after surgery, the decrease in attention postoperatively is translated into a more negative attitude about the body as well as less satisfaction with surgery outcome.

CONCLUSION

This study may help to clarify why clinicians' objective assessments of surgical outcome do not always match the subjective assessments of their patients. Although this study was done on patients who underwent nasal surgery we believe that the results are valid to any kind of surgery. We have found that even though the objective results (endoscopic findings) of the surgery were similar in both groups of patients the subjective results differ significantly. AA should be borne in mind when the currently popular method of patient questionnaires is used to assess the success of surgical and medical treatment^(29,30). Furthermore, giving anxious patients more care and attention also postoperatively may help them cope better with this type of stressful event.

REFERENCES

- Berant E, Mikulincer M, Shaver PR. Mothers' attachment style, their mental health, and their children's emotional vulnerabilities: A 7-year study of children with congenital heart disease. *J Personality* 2008; 76: 31-66.
- Mikulincer M, Shaver PR. *Prosocial motives, emotions, and behavior*. Washington, DC: American Psychological Association, 2008 (in press).
- Bowlby J. *Attachment and loss: Separation*. New York: Basic Books, 1973.
- Bowlby J. *Attachment and loss*. New York: Basic Books, 1969/1982.

5. Bowlby J. *A secure base*. New York: Basic Books, 1988.
6. Mikulincer M, Shaver PR. *Attachment in adulthood: Structure, dynamics and change*. New York: Guilford Press, 2007.
7. Mikulincer M, Shaver PR. The attachment behavioral system in adulthood: activation, psychodynamics, and interpersonal processes. In: Zanna MP, ed. *Advances in experimental social psychology*. New York: Academic Press, 2003; 35: 53-152.
8. Hazan C, Shaver PR. Romantic love conceptualized as an attachment process. *J Personality Soc Psychol*. 1987; 52: 511-524.
9. Ainsworth MDS, Blehar MC, Waters E, et al. *Patterns of attachment: assessed in the strange situation and at home*. Hillsdale, NJ: Erlbaum, 1978.
10. Brennan KA, Clark CL, Shaver PR. Self-report measurement of adult attachment: an integrative overview. In: Simpson JA, Rholes WS, eds. *Attachment theory and close relationships*. New York: The Guilford Press, 1998; 46-76.
11. Mikulincer M, Horesh N, Levy-Shiff R, et al. The contribution of adult attachment style to the adjustment to infertility. *Br J Med Psychol*. 1998; 71: 265-280.
12. Meredith PJ, Strong J, Feeney JA. The relationship of adult attachment to emotion, catastrophizing, control, threshold and tolerance, in experimentally-induced pain. *Pain* 2006; 120: 44-52.
13. Birnbaum GE, Orr I, Mikulincer M, et al. When marriage breaks up: Does attachment style contribute to coping and mental health? *J Soc Personal Relationships* 1997; 14: 643-654.
14. Mikulincer M, Florian V. The relationship between adult attachment styles and emotional and cognitive reactions to stressful events. In: Simpson JA, Rholes WS, eds. *Attachment theory and close relationships*. New York: Guilford Press, 1998; 143-165.
15. Mikulincer M, Florian V. Appraisal and coping with a real-life stressful situation: The contribution of attachment styles. *Personality Soc Psychol Bull* 1995; 21: 408-416.
16. Mikulincer M, Florian V, Weller A. Attachment styles, coping strategies, and posttraumatic psychological distress: The impact of the Gulf War in Israel. *J Personality Soc Psychol* 1993; 64: 817-826.
17. Berant E, Mikulincer M, Florian V. The association of mother's attachment style and their psychological reaction to the diagnosis of infant's congenital heart disease. *J Soc Clin Psychol*. 2001; 20: 208-232.
18. Berant E, Mikulincer M, Florian V. Marital satisfaction among mothers of infants with congenital heart disease: the contribution of illness severity, attachment style and the coping process. *Anxiety Stress Coping* 2003; 16: 397-415.
19. Veit CT, Ware JE. The structure of psychological distress and well-being in general populations. *J Consult Clin Psychol* 1983; 51: 730-742.
20. Weinman J, Petrie KJ, Moss-Morris R, et al. The Illness Perception Questionnaire: a new method for assessing the cognitive representation of illness. *Psychol Health* 1996; 11: 431-446.
21. The WHOQOL Group. The World Health Organization Quality of Life Assessment (WHOQOL): Position paper from the World Health Organization. *Soc Sci Med* 1995; 41: 1403-1409.
22. Orbach I. Dissociation, physical pain and suicide: a hypothesis. *Suicide Life Threat Behav* 1994; 24: 68-79.
23. Orbach I, Mikulincer M. The body investment scale: construction and validation of body experience scale. *Psychol Assess* 1998; 10: 415-425.
24. Rorschach H. *Rorschach-Test, Psychodiagnostics Plates*. Bern, Switzerland: Verlag Hans Huber AG, 1994.
25. Acklin MW, Bernat E. Depression, alexithymia, and pain prone disorder: A Rorschach study. *J Personality Assess* 1987; 51: 462-479.
26. Exner JE. *A Rorschach Workbook for the Comprehensive System*. Asheville, North Carolina: Rorschach Workshops, 2001.
27. McDougall J. *Theaters of the Body*. London: Free Association Books, 1989.
28. Cox BJ, Kuch K, Parker JD, et al. Alexithymia in somatoform disorder patients with chronic pain. *J Psychosom Res* 1994; 38: 523-527.
29. Birch DS, Saleh HA, Wodehouse T, et al. Assessing the quality of life for patients with chronic rhinosinusitis using the "rhinosinusitis disability index". *Rhinology* 2001; 39: 191-196.
30. Bhattacharyya N, Kepnes LJ. Clinical effectiveness of coblation inferior turbinate reduction. *Otolaryngol Head Neck Surg* 2003; 129: 365-371.

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