Long-term psychological sequelae of augmentation mammoplasty

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Abstract **A request for elective surgery for augmentation mammoplasty (AM) is often associated with underlying psychopathology and high expectations of a positive psychological outcome. This study was designed to ascertain the long-term psychological sequelae of AM in a group of patients who were reassessed 3 years or more after surgery. The postoperative study cohort of 20 patients constituted 67% of the original sample that was psychologically assessed pre-operatively. The results show that the majority of patients benefited psychologically from the AM and had experienced an improvement in psychosexual functioning and a reduction of high pre-operative levels of negative body image, anxiety and depression. Although not all expectations had been met and basic personalities remained unchanged, most women had no regrets and would recommend AM to other women in similar circumstances. They had not, however, seriously considered the possibility of unsatisfactory postoperative outcome. The value of close liaison between mental health specialists and plastic surgeons is emphasised.**

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Throughout history female breasts have been admired for both their erotic beauty and functional purpose. Western society, in particular, considers breasts the ultimate mark of femininity and this partly accounts for its increased preoccupation with breast size. As a result, augmentation mammoplasty (AM) has become one of the most sought-after elective cosmetic procedures. The media, fashion and related industries all emphasise the desirability of a full, taut bust. Although some women who seek AM merely want the perfection that modern surgery can offer, many women with a self-perceived inadequate bust who request AM have psychological problems.[1] These may be associated with frank psychopathology and/or may be age-related.[1] In some patients they originate during the crucial adolescent developmental phase when preoccupation with physical appearance is common, whereas in others there is a more immediate dissatisfaction with breasts in later life following, for example, childbirth, breast-feeding, and natural ageing. Such women are known to experience a deep sense of psychological loss. Several theories have been put forward with regard to the symbolic, psychological and other variables associated with this sense of loss and consequent requests for AM.[1,2] Cultural factors are important in health care generally,[3,4] but particularly so in requests for AM.[1,5] Many women attempt to attain the cultural 'ideal' when seeking AM.[1] Thus, in requests for AM, the health-care link between mind and body[3] is evinced in the psychological needs of these women.[6-9] Although there are cultural[5] and psychological differences,[1,2] the commonest motivations for most patients whose requests for AM are psychologically determined are acceptability of their breasts to themselves and others (especially sexual partners), and expectations that a more physically attractive body will contribute positively to their psychological make-up. Psychological evaluation, therefore, is often important in determining the validity of the reasons for the request and to identify (or exclude) any pre-existing psychopathology which may complicate postoperative adjustment, notably dysmorphophobia.[10-12] It has been consistently noted[1,2,6-9] that many of these patients have a pre-operative psychiatric history (especially of depression), poor self-confidence and self-esteem, and a negative body image. During assessment of pre-operative mental state, psychological problems might be masked in an attempt to impress the clinician in the hope that this will favour a recommendation for surgery.[1,7] Thus, underlying psychopathology may never be revealed unless the patient is carefully evaluated.[1,13] Marital and sexual problems are not uncommon in these patients,[1,2,13] and those patients who request AM to salvage a relationship (or marriage) should be particularly carefully evaluated,[1,13,14] especially if the request results from partner pressure. Occasionally these women display phobic anxiety after breast-play,[1,6,13,15] some go to great lengths during sexual intercourse to conceal their breasts from partners,[1,8] and are even reluctant to undress for routine medical examinations.[1,2,13]

Generally AM has few surgical complications, but they can and do occur.[16,17] Many patients lose sight of the possibility, or believe it will not happen to them. When it does occur, they are sometimes unable to cope psychologically with the disappointment.[2] Some patients and/or partners do, however, express pre-operative concern about the possibility of postoperative pain, possible complications, the future appearance of their breasts (i.e. their softness or firmness), the severity of scarring, the loss of breast sensitivity, etc.[13,18] Such circumstances further emphasise the value of a pre-operative psychological evaluation and postoperative follow-up,[2,13] especially given the risk of subsequent litigation.

The question remains as to whether the patient who is deemed psychologically suitable for surgery and who undergoes AM acutally benefits psychologically. Positive psychological sequelae can occur postoperatively and although some research has addressed this issue, few studies employed well-controlled objective research designs and used long-term psychometric follow-up comparative data to determine the postoperative psychological impact of AM. Furthermore, for a follow-up study to give a more accurate assessment of the psychological sequelae of AM, it needs to compare pre-operative data of the same sample several years post-operatively. The aim of the present study was to overcome some of these research problems and to provide a more comprehensive perspective on the long-term psychological sequelae of an elective request for AM. It is a follow-up of a previous study[1] which examined underlying pre-operative psychopathology.

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Patients and methods

Originally 30 patients were evaluated pre-operatively[1] after a request for AM. Of these, 20 (67%) were subsequently reassessed 3 years or more postoperatively. They were selected for the present study because all of them had experienced significant psychological distress pre-operatively[1] which had been a prime motivation for their elective request for AM. A comparative analysis was made between the pre-operative and postoperative data obtained individually from a semi-structured clinical interview, a mental state examination (MSE) and evaluation in terms of the Beck Depression Inventory (BDI).[19] The detailed semi-structured interview assessed interpersonal skills and relationships; body and breast perception in relation to body image; intrapsychic factors; marital adjustment (obtained by means of an adaptation of the relevant section of the Multimodal Questionnaire (MMQ)),[20] and self-image (assessed by means of an adaptation of Adult Self-Image Scales (ASIS).[21] Additional objective psychometric information was gathered postoperatively through individual administration of the locally standardised[22] Sixteen Personality Factor Questionnaire (16PF),[23] and the Koide Body Image Questionnaire (KBIQ),[24] previously adapted for use with medical patients.[25] The postoperative psychological evaluation of each patient was extensive and lasted approximately 2½ hours.

Results

The patients' ages ranged from 20 to 40 years (mean 34,5 years). Eleven (55%) were housewives at the time of the assessment, 6 (30%) were divorced, and 2 (10%) were single. Eight (40%) had sought professional mental health treatment (mainly for depression), and many who had not done so said that on occasion they felt in need thereof. Eleven (55%) reported alcohol-related pschoactive substance abuse in their immediate families, and a psychiatric history was evident in the families of 4 (20%). Prime motivations for requesting AM included a desire to improve self- and body image (15; 75%); the improvement of unsatisfactory sexual relationships (11; 55%); media influence (10; 50%); advice of others — usually a general practitioner, a friend who had successfully undergone AM, or a sexual partner (10; 50%); an expectation that AM would provide gateways to friendship, admiration and social acceptance (15; 75%); and guilt feelings induced either by sexual partners or feelings that they had requested an AM for selfish reasons (5; 25%). In some instances patients either did not respond to all the items or responded to more than one item explored on a given topic; total percentages are thus greater or less than 100%.

Sixteen (80%) patients complained about the lack of sufficient (comprehensive) information on the surgical procedure, 9 (45%) about unexpected postoperative pain and 12 (60%) about inadequate information in respect of possible suitable postoperative exercises. Twelve (60%) had not seriously considered surgical failure, and 16 (80%) said they would not have been able to cope well had the procedure failed in any way and that they had not considered the possibility of postoperative complications. Ten (50%) would have liked professional psychological aid postoperatively as part of a multidisciplinary treatment package to help them deal with pre-operative psychological problems such as marital and sexual problems which they had hoped would have been resolved after the AM. Some patients also felt the need for psychotherapy postoperatively to facilitate incorporation of the 'new' breasts into an extended body image and to overcome anxiety related to earlier feelings of diminished femininity.

Most patients had expected psychological changes as a result of the AM. Eight (40%) believed that attitude and personality features would change postoperatively; 18 (90%) believed that they would become more self-confident; 17 (85%) believed that their interpersonal skills would improve; 10 (50%) felt that their social relationships would improve; 4 (20%) felt that they would become more socially acceptable; 16 (80%) believed that their sexual relationships would improve; and 16 (80%) were looking forward to an improved self-image by changing their clothing styles. The majority (16; 80%) felt that improvement did occur postoperatively in many of the above-mentioned areas.

Exploration of childhood relationships generally revealed positive descriptions of mother-daughter relationships, some patients considering their mothers to have been good, close friends. Ten patients (50%) described a current positive attitude towards their mothers, 8 (40%) felt indifferent and only 2 (10%) had had a negative attitude as children towards their mothers. By contrast, most described their fathers as emotionally distant, strict and aggressive at times. An indifferent current attitude towards their fathers was expressed by 11 (55%) of the women, 4 (20%) had a positive attitude towards their fathers, and 5 (25%) a negative attitude. With regard to other interpersonal relationships during adolescence, more than half of the women (11,5%) were discontented at school, while 5 (25%) had experienced scholastic problems. Six (30%) patients described their childhoods as happy, while the remainder felt it had been either satisfactory (12; 60%) or unpleasant (2; 10%).

Fifteen patients (75%) subjectively evaluated their interpersonal skills as good or very good following the AM, 14 (70%) expressed a marked improvement in self-confidence, and 12 (65%) were involved postoperatively in more social activities. Thirteen (65%) continued socialising with the same friends, while 7 (35%) developed new friendships and 16 (80%) felt socially more acceptable and found life generally more enjoyable. At the time of assessment, 12 (60%) regularly participated in sporting activities (especially swimming and aerobics) on which they had placed a low premium pre-operatively. Four (20%) had changed their marital status, while 12 (60%) had remained with the same sexual partner. Most (14; 70%) reported that they were involved in a fairly good, stimulating intimate relationship, whereas pre-operatively as many as 19 (90%) had reported being involved in problematic intimate relationships. The majority of the married patients reported an improvement in the quality of their marital relationships generally. This was confirmed by their partners and their responses to the marital satisfaction component of the MMQ. By contrast, most of the patients (16; 80%) said that before AM they had experienced a problematic sexual relationship where they felt self-conscious and were unable to appear naked before their partners and generally unable to relax or communicate adequately. Seventeen (85%) disliked breast-play pre-operatively, 16 (80%) were embarrassed or shy to undress in front of their partners, 16 (80%) were unable to relax during sexual intercourse (especially when the room was lit), 9 (45%) were frequently teased by partners about their breasts, and 16 (80%) felt personally responsible for their sexual problems. Although a few patients continued to experience difficulties in appreciating breast-play postoperatively, were still unable to relax completely during sexual intercourse and were still tense when seen naked by their partners, these problems were not of the same intensity as pre-operatively.

Fourteen of the patients (70%) said that both quality and the frequency of sexual intercourse had increased postoperatively, although 5 (25%) claimed a return to

the low pre-operative frequency of sexual intercourse approximately 8 months postoperatively. Pre-operative sexual problems related both to interpersonal issues and to sexual dysfunctions. The latter included sexual desire disorders, sexual arousal disorders and orgasm disorders. Of these, inhibited female orgasm predominated. Compared with pre-operative sexual response, 11 (55%) of the patients reported being orgasmic fairly frequently postoperatively, 17 (85%) displayed more confidence in their sexual relationships, 12 (60%) sometimes initiated sex, and 10 (50%) were able to relax more when having sexual intercourse in daylight or with the lights on. Twelve patients (60%) felt that their breasts pleased their partners and that the partners displayed more interest in them as women. Of the patients who were still with the same sexual partner, only 7 partners (35%) were concerned about the possibility of or discomfort of post-surgical pain. Seventeen (85%) patients said they would make the decision to have an AM again if necessary, while 18 (90%) would recommend it to other women in similar circumstances.

Most of the patients were pleased with the physical appearance of their 'new' breasts: 18 (90%) were satisfied with the size, 17 (85%) were happy with the shape, 15 (75%) were satisfied with the firmness, 13 (65%) felt that initial tissue scarring was not unduly bothersome, 15 (75%) felt physically more attractive and 13 (65%) felt that it was close to their ideal. Nevertheless, 8 (40%) wished they had requested a larger bust. Before AM, only 9 patients (45%) felt physically attractive as women in comparison with 14 (70%) who felt attractive postoperatively. Culturally determined female beauty and femininity were important factors for many of these patients and 17 (85%) believed that shapeless or small breasts were less feminine than firm, larger ones. Preoperatively, 18 (90%) had experienced difficulty purchasing clothing (especially bodices, which were always too loose in relation to the rest of the outfit). Postoperatively all the patients reported purchasing fashion garments more frequently and generally enjoying this previously uncomfortable activity. Pre-operatively, only 3 (15%) of the patients felt comfortable when wearing a bathing suit as opposed to 11 (55%) postoperatively. None of the patients felt comfortable wearing low-cut garments fairly frequently pre-operatively, but they now felt comfortable and attractive in this type of clothing. An additional 9 (40%) patients reported feeling happy in tight-fitting garments, while 12 (60%) had changed their clothing style considerably after surgery. Thirteen patients (65%) did not score a postoperative negative body image on the KBIQ (Table I). By contrast, all these patients had pre-operatively rated themselves as having a negative body image.[1] Apart from these objective rating scores, 7 patients (35%) subjectively evaluated their sense of personal worth as being either good or very good pre-operatively, whereas 12 (60%) of them did so postoperatively. In addition 13 (65%) were found to have a positive and 3 (15%) a satisfactory self-image associated with a stable sense of identity postoperatively, while 13 (65%) claimed to be more assertive and confident about making decisions and planning their futures. Only 5 (25%) of the patients still appeared to be preoccupied with their breasts, whereas pre-operatively 15 (75%) had had strong feelings of inferiority. Pre-operatively they tended constantly to be aware of their inadequate breasts, which in turn influenced their attitudes to themselves and others, as well as their self-images. Some of these results were supported by their responses to the AS-IS, and an item analysis of specific subscales of the BDI discussed further on.

According to their own subjective evaluations most of the patients rated themselves more confident, optimistic, independent and assertive postoperatively (Table II). Both pre- and postoperatively they rated themselves as introverted, but postoperatively were more critical of circumstances which previously they would just have accepted. They also felt more psychologically mature.

TABLE I.
Post-operative evaluations of body image

	Positive body image			Negative body image	
	No.	%		No.	%
Very positive	1	5	Very negative	0	0
Positive	11	55	Negative	7	35
Average	1	5	Average	0	0
Total	13	65		7	35

TABLE II.
Subjective evaluations of personality traits

		Pre-operative		Post-operative	
		Frequency	%	Frequency	%
1.	Introvert	13	65	12	60
	Extrovert	7	35	8	40
2.	Self-conscious	15	75	7	35
	Confident	5	25	13	65
3.	Insecure	15	75	7	35
	Confident	5	25	13	65
4.	Pessimistic	6	80	6	30
	Optimistic	4	20	14	70
5.	Dependent	10	50	6	30
	Independent	10	50	14	70
6.	Assertive	6	30	12	60
	Defensive	14	70	8	40
7.	Accepting of circumstances	6	30	5	25
	Critical of circumstances	14	70	15	75
8.	Depressed	16	80	7	35
	Happy	4	20	13	65
9.	Inhibited	13	65	11	55
	Exhibitionistic	7	35	9	45
10.	Poor interpersonal skills	9	45	7	35
	Good interpersonal skills	11	55	13	65
11.	Submissive	11	55	12	60
	Domineering	9	45	8	40
12.	Passive	13	65	13	70
	Aggressive	7	35	6	30
13.	Immature	6	30	4	20
	Mature	14	70	16	80
14.	Loner	12	60	9	45
	Sociable	8	40	11	55

Because all the mean scores of the 16PF fell into the average range, the standard deviation for each factor was calculated and added to or subtracted from the means to obtain exaggerated factor scores for interpretation individually and in combination with other factors. The results revealed that most patients were reserved and self-critical, with average intelligence and low ego strength. They appeared rather submissive, serious, shy and restrained. Some of these findings were also supported by their subjective self-ratings (Table II). Both the MSE and further qualitative exploration of their personality traits indicated that many patients retained some neurotic tendencies, specifically related to their pre-operative preoccupation with their breast size.

Pre-operatively 19 patients (95%) fitted the predetermined criteria for depression on the BDI; 4 (20%) were severely depressed. Only 6 (30%) were depressed post-

operatively and only 1 (5%) severely so (Table III). Again, these scores were supported by their subjective self-ratings (Table II). Furthermore, pre-operative and postoperative individual item analyses of specific subscales of the BDI compared with the original study[1] showed that according to these subscores, all the patients rated themselves as having body image problems pre-operatively associated with depressive symptomatology, while only 2 (10%) found this to be a problem postoperatively; 19 (95%) scored high on the self-hate subscales pre-operatively as opposed to only 5 (25%) postoperatively; 10 (90%) experienced a loss of libido pre-operatively, while only 2 (10%) reported this postoperatively; only 2 (10%) of the patients scored high on the social withdrawal subscale after surgery, as opposed to 15 (75%) pre-operatively. Fewer patients (4; 20%) experienced a sense of self-hate postoperatively compared with 19 (5%) pre-operatively. Thus, scores on the BDI clearly indicated that not only was the sample less depressed but that after an AM, significantly fewer patients were found to have problems relating to specific depressive components associated with body image, loss of libido, social withdrawal, self-hate or a sense of failure. This lends further support to the results of the KBIQ, AS-IS and the patients' subjective self-rating (Table II). While the MSE confirmed the above findings it did, however, reveal that postoperatively 8 (45%) of the sample manifested symptoms of anxiety, as opposed to 11 (55%) pre-operatively, although the symptoms were not of sufficient severity to diagnose an anxiety disorder. These elevated anxiety levels might also be attributed to the sensitive circumstances surrounding the nature of psychological research on elective request for AM.

TABLE III.
Results of the Beck Depression Inventory*

	Pre-operative		Post-operative	
Score	No.	%	No.	%
<14	1	5	14	70
15 - 25	15	75	5	25
26>	4	20	1	5
Total	20	100	20	100

*McNemar's test = 9,6; degree of freedom = 1; $P < 0,001$

Discussion

AM resulted in significant psychological gains for most of these patients. Their pre-operative[1] low self-esteem, negative body image, poor interpersonal skills, anxiety, depression and psychosexual problems (noted also in such patients by other research findings[2,13,26-28]) improved considerably postoperatively. Congruent to the results of earlier studies[2,13] many patients in the present study had high expectations of the surgical outcome. Patients and partners were generally satisfied with the appearance of their breasts postoperatively, which further enhanced postoperative psychological gains. The biographical data in the present study were also supported by other findings which indicated an average age of 30 - 40 years[1,2,6,13,18] and a prevalence of: (*i*) married housewives[1,2,8,13,18,28] although some change their marital status soon after the AM; (*ii*) professional help in the past, especially for depression;[1,2,6,8,12,13,15,29] (*iii*) unhappy childhoods;[1,2,6,13] (*iv*) scholastic problems as children;[2,13] (*v*) the onset of psychological problems about their breasts at adolescence;[2,7,13,30,31] (*vi*) physical and psychological self-improvement as[1,15,29] motivations for requesting an AM; and (*vii*) pre-operative perceptions of AM as a solution to marital or sexual problems.[2,13,15]

Although most patients were satisfied with the postoperative appearance of their breasts, the need some had for still larger breasts, found also in other studies [5,13,32] emphasises the value of psychotherapy to assist the patient in incorporating the AM into an extended or 'altered' body image. This need has been reported also for other surgery patients.[25] Most patients did not think about the possibility of post-operative problems[16,17,33] and said that they would recommend the procedure to other women in similar circumstances and make the same decision again if they had to. However, many felt poorly prepared for the immediate postoperative pain. Although some patients have been reported to cry excessively postoperatively,[13,15] both because of the pain and the excitement of a 'new' bust, other researchers[18] report that most women accepted the initial discomforts experienced postoperatively, because they were so pleased with their enlarged breasts. From the results obtained, as well as those found in other studies,[13,28] it appears that the more positive these patients feel about the appearance of their breasts, the better their body image. Previous findings[13,15,18] were confirmed in that most of these patients feel proud of their 'new' breasts and physical appearance; this in turn enhances feelings of femininity,[8] self-confidence when wearing tight-fitting clothes,[13,28] and enjoyment in 'showing off' their bodies and participating in activities which reveal their bodies, e.g. wearing low-cut garments and bathing suits.[13] This is probably also a result of improved postoperative body image reported in some earlier studies.[6,8,13,26]

Because of their enhanced self-confidence and improved self-perception many patients in this study, as well as in previous studies,[1,13] became more assertive, experienced improved interpersonal skills, and were consequently able to relate better to others, both on a social and a professional level. As mentioned, a number of studies have shown that many patients who request an AM expect the outcome to have a positive effect on their marital/sexual relationships. Although, in this regard, some studies[8,15] reported less spectacular results than expected, the present study is consistent with others[18] that found that the majority of patients reported an improvement in their sexual and marital relationships postoperatively in terms of both the frequency and the quality of sexual intercourse. They generally tended to be more confident sexually and more active than before the AM. They felt less self-conscious when seen naked by their partners, reported enjoying breast-play more, and were able to experience orgasm more frequently. Likewise, many patients said that their breasts now pleased their partners. Their resultant improved sense of personal worth, positive self-image, improved sense of feminine identity and self-control, renewed plans for the future, increased assertiveness and confidence, decreased preoccupation with their breasts, and reduced feelings of introversion and inferiority are consistent with some previous findings.[13,15,18,28] Although the results from the present study indicate positive psychological sequelae after AM, most patients' basic personalities did not change, a finding supported by previous research.[8] This lends further credence to the thesis that those patients who can benefit from psychotherapy as an adjuvant (or alternative) to surgery should be identified. On the other hand, in some instances, cosmetic surgery can function as an adjuvant to psychotherapy.

After the present research was concluded, the authors met with a number of medical colleagues to discuss the preliminary findings. Many of them were unaware of the psychological problems experienced by some patients requesting AM, and although some confirmed our findings in their patients, others appeared surprised to hear about the psychological problems these patients experienced. Further, there might be dif-

ferences between private patients (who pay for their elective cosmetic surgery) and those who request the operation on a subsidised medical service from the State as was the case with our sample. The psychological make-up and the problems experienced by these patients might remain unknown unless an appropriate psychological opinion is obtained. Many of these patients could, therefore, receive the physical change desired, but might be left with unresolved psychological problems postoperatively. Although AM is generally regarded psychologically as a successful surgical procedure, it is, however, often positively evaluated only according to the postoperative physical appearance of the breasts. All too often little consideration is given to other aspects of its psychological success (or failure), including the woman and her partner's individual perceptions. Psychological consideration of factors contraindicating or indicating AM can benefit both patient and surgeon, given the patient's high expectations of the psychological outcome of the AM. Sometimes such an assessment can in itself be therapeutic. This is particularly important also in those patients who have vague motivations when requesting AM, those with a history of repeated surgery which never quite satisfies the patient, those who are unable realistically to define the desired changes, and those in whom adverse psychological sequelae might result or where the AM might exacerbate pre-existing psychopathology. In addition, many patients request AM in an attempt to correct a perceived negative body image. Although body image is not always a clearly defined concept,[25] it is influenced, *inter alia*, by the concept society has of beauty, by cultural factors, by personality make-up and by the symbolic associations of the breasts. All of these might affect a patient's perception of the results of the AM.[13] Her aesthetic judgement is often a personal response to the AM, rather than an appreciation of beauty in a philosophical sense. Thus, while an AM might have been surgically successful, the patient ultimately decides subjectively whether the operation is successful or not.

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