may have been zinc deficient, though none had features attributable to zinc depletion. Again, these results might be explained by a diminished amount of zinc binder in the leucocytes.

A cellular effect of a low plasma concentration of zinc has recently been found by Patrick and his colleagues,¹⁰ who showed that the zinc is an important controller of the sodium pump in leucocytes. More recently Patrick *et al*¹¹ have reported an effect of zinc supplements on sodium transport in children with protein-energy malnutrition. They suggest that there may be a causal relation between the low plasma concentration of zinc and the impaired sodium transport seen, for example, in trauma and malnutrition.

Our knowledge of the chemical anatomy of zinc in health and disease is increasing rapidly. What we know so far suggests that low concentrations of zinc in plasma or cells are not adequate evidence of a primary zinc depletion. The cornerstone of the definition and detection of nutritional deficiencies is a therapeutic test.

- ¹ Prasad AS. Clinical, biochemical and pharmacological role of zinc. *Annu Rev Pharmacol Toxicol* 1979;**19**:393-426.
- ² Klevay LM, Reck SJ, Barcome DF. Evidence of dietary copper and zinc deficiencies. *JAMA* 1979;**241**:1916-8.
- ³ Aggett PJ, Harries JT. Current status of zinc in health and disease states. *Arch Dis Child* 1979;**54**:909-17.
- ⁴ Walker BE, Dawson JB, Kelleher J, Losowsky MS. Plasma and urinary zinc in patients with malabsorption syndromes or hepatic cirrhosis. *Gut* 1973;**14**:943-8.
- ⁵ Walker BE, Bone I, Mascie-Taylor BH, Kelleher J. Is plasma zinc a useful investigation? *Int J Vitam Nutr Res* 1979;**49**:413-8.
- ⁶ Lekakis J, Kalofoutis A. Zinc concentrations in serum related to myocardial infarction. *Clin Chem* 1980;**26**:1660-1.
- ⁷ Balogh Z, El-Ghobarey AF, Fell GS, Brown DH, Dunlop J, Dick WC. Plasma zinc and its relationship to clinical symptoms and drug treatment in rheumatoid arthritis. *Ann Rheum Dis* 1980;**39**:329-32.
- ⁸ Swaminathan R, Chapman C, Segall NH, Morgan DB. Red-blood-cell composition in thyroid disease. *Lancet* 1976;iii:1382-5.
- ⁹ Keeling PWN, Jones RB, Hilton PJ, Thompson RPH. Reduced leucocyte zinc in liver disease. *Gut* 1980;**21**:561-4.
- ¹⁰ Patrick J, Michael J, Golden MN, Golden BE, Hilton PJ. Effect of zinc on leucocyte sodium transport in vitro. *Clinical Science and Molecular Medicine* 1978;**54**:585-7.
- ¹¹ Patrick J, Golden BE, Golden MHN. Leucocyte sodium transport and dietary zinc in protein energy malnutrition. *Am J Clin Nutr* 1980;**33**:617-20.

Regular Review

Dysmorphophobia and the search for cosmetic surgery

ARTHUR H CRISP

The pressures for social conformity and a sense of personal acceptability and worth have always encouraged some people to search for cosmetic solutions. In our own society in the past wigs, bustles, and false busts have been accepted as the norm. Most of our population today wear dentures, at least in part for cosmetic reasons. Nevertheless, those who seek radical and permanent changes in their bodies in an effort to change their appearance, and whose bodies are seen by most others as normal or unremarkable, are somewhat more suspect: the term dysmorphophobic has been coined to describe them.

The anorectic achieves such change in a gross way by pathological slimming, thus banishing the most hated and feared part of herself. The man totally preoccupied with body building seeks an obvious and frequent confirmation of his masculinity. Others turn to surgery to achieve the necessary changes. The feminine need to reduce "fatness" finds expression here in a wish that the surgeon will remove fat from various parts of the body and will reduce the size of the breasts. Breast enhancement, blepharoplasty, and facelifts seem, perhaps, to have a more positive basis with their aim of making the woman feel and appear more desirable, youthful, and adequate. Hair transplants in men may have a similar basis. And what of rhinoplasty? In any one case is it the racial nose or specifically the shape of nose inherited from one or other parent which is now being rejected? Studies have shown that in such circumstances the physical deformities are often minor in themselves; the degree of deformity is unrelated to psycho-

logical disturbance—or satisfaction with the effects of surgery.^{1 2}

Several studies have shown that, in the short term at least, many people who have persistently sought and undergone such cosmetic surgery have then been satisfied.³⁻⁷ The results are, however, inconsistent: other studies have shown much greater psychiatric morbidity^{7 8} and less favourable results of surgery.^{9 10} The differences probably reflect differences in the populations studied. Cosmetic surgeons are often well aware of the hazards of their profession. A few patients do badly, becoming obviously and immediately paranoid, litigious, depressed, or suicidal. Such individuals cannot always be easily detected beforehand, when—singlemindedly pursuing their objectives—they may ably conceal aspects of their past and their inner thoughts. Nevertheless, with proper screening some potential morbid psychological responses to surgery can be identified.

Schizophrenics sometimes seek cosmetic surgery in response to or as part of their hallucinatory and delusional experiences and passivity. Schizophrenia is not always a contraindication to surgery,¹¹ but most often the appropriate medical response will be to treat the psychosis. If schizophrenic symptoms are at all evident then cosmetic surgeons are likely to be wary. If paranoid elements are to the fore then they are certainly wise to be so. Surgery may lead either to further unrelenting complaint about its failure to relieve the deformity, or else the patient may no longer blame his deformity for his problem but

instead decompensate further and blame the rest of the world. Such potential paranoid illness may present predominantly as a depressive disorder in the consulting room before surgery. More difficult is the schizophrenic who has a capacity to conceal his psychosis in the consultation.

The personality aspects of clients for cosmetic surgery may range from profound and often permanent disorders of gender identity, through transitory adolescent and mid-life crises of personal adjustment, to a reasonable response to realistic social pressure. These may all be interwoven with psychoneurotic illness. Problems of gender identity may range from those of the frank transsexual to muted and sometimes unwitting expression taking the form of search for such procedures as rhinoplasty or breast reduction.

The intensity of the pursuit of cosmetic surgery for the removal of body fat, especially in young women, often diminishes with the passage of time. A determination in early adult life to banish from the self some aspect of the stigmatising, symbolic, and hated family facies may also diminish or change radically in later life, as children recreate the feature, parents die, and some involution occurs. The attempt by older women to stave off aging and presumed rejection by uplifting procedures will attenuate only as either despair or acceptance eventually takes over.

Meanwhile, all these individuals have in common their current conviction that if they looked different then a sense of social or sexual inadequacy would be overcome. Most authorities claim to have identified an excess of personality-disordered individuals among those seeking cosmetic surgery.^{1 2 12-14} Attempts have been made to separate such populations into two groups—those whose complaint is unrelated to the personality disorder and whose search for change in appearance is likely to be more realistically based and those in whom the complaint is centrally embedded within their disturbed personality. This is probably an artificial distinction, but it serves to make the practical point that while all these patients firmly believe that their destinies are governed by this or that aspect of their appearance a few have totally unrealistic conceptions of the potential for change in their lives offered by surgery.

Psychiatrists have learnt to be wary of monosymptomatic states in the clinic. They often prove difficult to shift. Doubtless they see the more florid end of the spectrum of dysmorphophobia. Such complaints seem to indicate lack of other, more effective coping strategies and may, indeed, sometimes be wise alternatives to depression in the absence of further capacity for personal and social development. Unfortunately, such patients also often prove singularly resistant to investigation through interview of their feelings and personal needs.

Assessment—Since patients seeking cosmetic surgery of the kind described above are usually explicitly seeking improvement of their self image and self concept, the logical—and professionally proper—first step should be to assess their psychological and social background and state and the extent to which relevant cultural factors are likely to be permanent or merely transitional. Such a psychosocial evaluation will benefit from the presence of a second informant. It should take the form, firstly, of a general and conventional psychiatric history with special emphasis on assessment of personality resources in relation to prevailing personal, social, and marital circumstances, coupled with an evaluation of the reasons for presentation at this point in life¹⁵; and, secondly, an evaluation of the personal meaning of the organ or tissue which bothers the individual so much.

Such an assessment should provide the basis for a more accurate prediction of the immediate and long-term outcomes of surgical intervention and a decision about the potential for alternative treatments in patients with contraindications to surgery, such as the presence of psychosis or related personality disorder. If this assessment has been made by the patient's general practitioner or the cosmetic surgeon then referral to a psychiatrist may now be appropriate, since such potential alternative treatments may range from the specialised pharmacological and social management of schizophrenia to the occasional referral of patients judged to be suitable for individual or group psychotherapy.

ARTHUR H CRISP

Professor of psychiatry,
St George's Hospital Medical School,
London SW17 0RE

¹ Hay GG. Psychiatric aspects of cosmetic nasal operations. *Br J Psychiatry* 1970;**116**:85-97.

² Hay GG. Dysmorphophobia. *Br J Psychiatry* 1970;**116**:339-406.

³ Baker TJ. Patient selection and psychological evaluation. *Clin Plast Surg* 1978;**5**:3-14.

⁴ Reich J. The surgery of appearance: psychological and related aspects. *Med J Aust* 1969;**ii**:5-13.

⁵ Meyer E, Jacobson WE, Edgerton MT, Canter A. Motivational patterns in patients seeking elective plastic surgery. I. Women who seek rhinoplasty. *Psychosom Med* 1960;**22**:193-201.

⁶ Linn L, Goldman IB. Psychiatric observations concerning rhinoplasty. *Psychosom Med* 1949;**11**:307-14.

⁷ Klabunde EH, Falces E. Incidence of complications in cosmetic rhinoplasties. *Plast Reconstr Surg* 1964;**34**:192-6.

⁸ Wright MR, Wright WK. A psychological study of patients undergoing cosmetic surgery. *Arch Otolaryngol* 1975;**101**:145-51.

⁹ Anonymous. Hazards of cosmetic surgery. *Br Med J* 1967;**ii**:381.

¹⁰ Hinderer UT. Dr Vazquez Anon's last lesson. *Aesthetic Plastic Surgery* 1976;**58**:273-9.

¹¹ Arnoff JS. The psychiatric aspects of rhinoplasty. In: Conley J, Dickinson JT, eds. *Plastic and reconstructive surgery of the face and neck. I*. Stuttgart: Thieme Verlag, 1972:97,99.

¹² Dietrich H. Über Dysmorphophobie (*Missgestaltfurcht*). *Arch Psychiatr Nervenkr* 1962;**203**:511-8.

¹³ Janet P. Obsession de la honte du corps. In: *Les obsessions et la psychasthénie*. 2nd ed. Paris: Baillière, 1908.

¹⁴ Clarkson P, Stafford-Clark D. Role of the plastic surgeon and psychiatrist in the surgery of appearance. *Br Med J* 1960;**iii**:1768-71.

¹⁵ Webb WL, Slaughter R, Meyer E, Edgerton M. Mechanisms of psychosocial adjustment in patients seeking "face-lift" operation. *Psychosom Med* 1965;**27**:183-92.