

A PLASTIC SURGERY IN ANCIENT INDIA

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From 1769 AD to 1799 AD, in a period of thirty years, four Mysore Wars were fought between Hyder Ali and his son Tipu Sultan and the British. As a result of these wars the British learnt two very important Indian techniques -- rocketry and plastic surgery. Both these Indian techniques were further improved first in England and then in other European countries (see 'Story of Indian Rockets', DREAM, October 1999). How the British learnt the art of Indian plastic surgery is a fascinating story. A Maratha, cart-driver, Kavvasajee, who had served the British, and four Indian soldiers of British army had fallen into the hands of the Sultan of Srirangapatnam. Their noses and right arms were cut off, as a punishment for serving the enemy. Then they were sent back to the English command. After some days, when dealing with an Indian merchant, the English commanding officer noticed that he had a peculiar nose and scar on his forehead. On inquiry, he learnt that the merchant's nose had been cut off as a punishment for adultery and that he had, a substitute nose made by a Marathavairya of the millibar (potter) caste. The commanding officer sent him, for the Vaidya and asked him to reconstruct the nose of Kavvasajee and others.

The operation was performed near Pune in the presence of two English doctors, Thomas Cruso and James Findlay. An illustrated account of this operation, carried out by an unnamed Vaidya, appeared in the Madras Gazette. Subsequently, the article was reproduced in the Gentleman's Magazine of London in October 1794. The operation is described as follows: "A thin plate of wax is fitted to the stump of the nose so as to make a nose of good appearance; it is then flattened and laid on the forehead. A line is drawn around the wax, which is then of no further use, and the operator then dissects off as much skin as it had covered, leaving undivided a small slip between the eyes. This slip preserves the blood circulation till a union has taken place between the new and the old parts. The cicatrix of the stump of the nose is next paired off, and immediately behind the new part, an incision is made through the skin which passes around both nostrils, and goes along the upper lip. The skin, now brought down from the forehead and being twisted half around, is inserted into this incision, so that a nose is formed with a double hold above and with its alae and septum below fixed in the incision. A little Terra Japonica (pale catechu) is softened with water and being spread on slips of cloth, five or six of these are placed over each other to secure the joining.

No other dressing but this cement is used for four days. It is then removed, and cloths dipped in *ghee* are applied. The connecting slip of skin is divided about the twentieth day, when a little more dissection is necessary to improve the appearance of the new nose. For five or six days after the operation, the patient is made to lie on his back, and on the tenth day, bits of soft cloth are put into the nostrils to keep them sufficiently open. This operation is always successful. The artificial nose is secured and looks nearly as well as the natural nose, nor is the scar on the forehead very observable after a length of time." This description fired the imagination of the young English surgeon J.C. Carpué, who after gathering more information of the "Indian nose" performed two similar operations in 1814 with successful results. After Carpué published his account, Graefe,

a German surgeon, performed similar plastic operations of the nose using skin from the arm. After this plastic surgery became popular throughout Europe. Similar replacement operations which use skin in the immediate vicinity of the loss are known as Indian plastic surgery.

Plastic surgery has little to do with plastics, the synthetic substances so common today. The term 'plastic', derived from the Greek *plastikos*, means to mould or shape. The task of plastic surgery is to restore the appearance and function of *parts of the* body destroyed or damaged by disease or injury. Contrary to popular belief, plastic or reconstructive surgery is not merely cosmetic surgery but an important discipline that aims at correcting all sorts of physical deformities. Though a very old technique, plastic surgery has made great strides only after the First World War. The Bible contains no reference of plastic operations. There is no mention of plastic surgery in the ancient Greek literature. Homer (9th century BC) has described various types of wounds and their treatments but did not mention the possibility of replacing parts of the nose or other features. Roman legends vaguely mention plastic surgery. Genuine records of plastic operations are not found in Europe until the middle of the fifteenth century,

These come from Italy. Many European scholars are of the opinion that reports of Indian plastic operations reached Italy by way of seamen and merchants, who used to undertake long journeys to the Far East at the beginning of the Middle Ages. Like other methods Indian mathematics and medicine, the Italians might have learnt the techniques of Indian plastic surgery from the Arab Moors. From Italy we have the record that in 1442, Brucicchio, a surgeon of Catania in Sicily, carried out plastic operations of the nose, using flap from the face. His son Antonio continued his work and was the first to use a flap from the arm for reconstructing the nose. The work was carried on by the Boicchi, another Italian family. The plastic operations carried out by the Boicchi brothers are described in a book published in 1568 by Fioravanti, a doctor of Bologna. However, it was in the hands of Gaspard Tagliacozzi (1546-99), a professor of surgery and of anatomy at the Bologna University, that plastic surgery attained wide fame in Europe. His book *De curtorum chirurgia per insitionem* (The surgery of defects by implantation), printed in 1598 was the first scientific treatise on plastic surgery. Tagliacozzi has described a method of plastic substitution of the nose by skin from the arm and of replacement of the ears and lips, demonstrating his work by a large number of illustrations. The Church dignitaries regarded plastic surgery as an interference in the affairs of the Almighty. They not only excommunicated Tagliacozzi but later got his corpse exhumed from its church grave and placed in an unconsecrated ground! In the 17th and 18th century not much impatience was attached to plastic surgery in Europe. The great Voltaire (1694-1778) wrote a satirical-poem on Tagliacozzi and his operation on the nose, using flap from the buttocks. Many gentlemen who lost their nose in duel or through other misfortunes had substitutes made of gold, silver or ivory. The Danish astronomer Tycho Brahe (1546-1601) once became involved in a dispute with another young Danish nobleman over who was the better mathematician. The dispute led to a duel in which Tycho lost part of his nose. This he replaced with a mixture of gold, silver, and wax, of which he was very proud.

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