

# SUSHRUTA'S DESCRIPTION OF RECONSTRUCTING A NOSE

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Novel approach: The surgical procedure was unfamiliar to the British. | Photo Credit: Getty Images

Surgery performed on the nose is called rhinoplasty. In the modern era, it is popularly called a 'nose job' and is often associated with vanity — the cosmetic improvement of "facial symmetry". Functional improvements to the airways is also a good reason for surgery, or less frequent causes such as birth defects (cleft palate) falls, cancers, etc.

India ranks fourth in the world in rhinoplasties performed annually. (A note of caution — availability of the procedure does not translate to widespread availability of expertise, and the outcome of nose jobs can be hit-or-miss. Prominent surgeons say that a significant number of their new patients are only seeking a 'redo').

The nose is a defining feature of our appearance and identity. This may explain why phrases such as the Hindi phrase, *naak kat gaya* (my nose was cut) refer to a not so literal loss of face. In many societies, the cutting of the nose was a severe form of punishment. This may also explain why the reconstruction of noses is a very old surgical procedure.

The first careful description of nasal reconstruction is found in the *Sushruta Samahita*. Modern scholars have dated this text to the 7th or 6th century B.C, its esteemed author having practiced this art on the banks of the Ganges. The collection of Sushruta's writings is regarded as the earliest true medical textbook.

Two sites were described for gathering the skin that would be reshaped into a new nose — the cheek or the forehead. A leaf was chosen that provided an approximate measure of the missing nose. A segment of skin was then incised from the cheek, but not fully detached — a short stalk or pedicle remained attached to the face for unhindered blood circulation. The scalpel was then deployed to make small raw wounds around the remaining nose stump.

The incised cheek flap was stretched over, positioned and stitched to the face at these raw spots. The nose was shaped by positioning stalks from the castor oil plant (Hindi - *arandi*; Tamil - *amanakku*) where nostrils should have been. A powdered mix of barberry, licorice and red sandalwood (Hindi - *daruhaldi*, *mithi lakdi*, *rakta chandan*; Tamil - *adimaduram*, *chandanam*) was then sprinkled over the area, as an analgesic and antiseptic. The wounds were covered with cotton, and sesame oil was constantly applied until the skins had fused — at which point the connection to the cheek was cut off.

Sushruta did not claim credit for inventing this technique. He described it as an 'ancient method'. The *Sushruta Samahita* was translated into the Arabic in the 8th century. A notable English translation by Kunja Lal Bhishagratna appeared in 1907. Curiously, there were no descriptions of rhinoplasty from Europe until the 13th century, when accounts of the "Indian cheek flap" method began to appear.

The fact that this surgical procedure was unfamiliar to the British is evident from a book, *An account of two successful operations for restoring a lost nose*, published in 1816 by Joseph Carpue of York, a pioneer of rhinoplasty in his country. In the book, he recounts the

observations of two “medical gentlemen” of the East India Company who had watched a surgery performed by one Mr. Kumar in Poona in 1792.

The unfortunate victim, Cowasjee, was a bullock-cart driver transporting goods for soldiers of the East India Company. His nose had been mutilated by men of Tipu Sultan’s army. In Mr. Kumar’s hands, a thin slab of wax that had been expertly shaped and trimmed to resemble the lost nose, was carefully flattened and placed on the forehead of the victim. The outline of this wax served as the boundary for the dissection of the skin, with the central part between the eyebrows, remaining connected to the face. The incised skin was then stretched downward to the region of the nose and stitched into place.

For antimicrobial action, catechu (Hindi - *kathha*; Tamil - *karungali*) was coated on the sites and a cloth soaked in *ghee* used as cover for a few days. Over time, no scars were visible, and the recipient could even sneeze and blow his nose without discomfort.

Performed nearly 2500 years after Sushruta wrote his text, the method was essentially unchanged.

It should be noted that this nasal reconstruction method was not a true graft. Skin grafting, the transplanting of an expanse of skin from another part of the body (or from another person or animal) would require advances in our understanding of the biology of tissue rejection and compatibility.

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