

The Indian method: Sushruta's influence on modern nasal reconstruction

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Ancient Indian medicine, as documented in the Sushruta Samhita, contains one of the earliest known references to nasal reconstruction, including surgical techniques still resembling modern practices. (The Sanskrit word 'Samhita' is used to define a collection of written work, similar to Codex in ancient Western texts). Written around 600 BC by the sage and surgeon Sushruta, his text laid the foundation for numerous surgical innovations, with rhinoplasty being one of the most notable contributions. This method, used to reconstruct mutilated noses, marked a pivotal moment in the history of reconstructive surgery.

In ancient India, the nose symbolised honour and dignity, and nasal mutilation was a common punishment for crimes like adultery, resulting in both physical disfigurement and social ostracism. Sushruta's rhinoplasty addressed this need and revolutionised nasal reconstruction. Later coined the 'Indian method,' his techniques spread to Europe in the 19th and 20th centuries, influencing modern reconstructive surgery.

Although often associated with the paramedian forehead flap, the Sushruta Samhita describes a technique more closely resembling a cheek-based (melolabial) flap. The procedure involved using a "creeper leaf" to measure the defect, after which a "patch of living flesh" was "sliced off from the cheek" and rotated to cover the nose [1]. The flap was affixed with bark fibres or horsehair sutures, while hollow tubes or reeds were inserted into the nostrils to maintain patency. Wound care included ghee (clarified butter) and honey to cleanse the wound and promote healing.

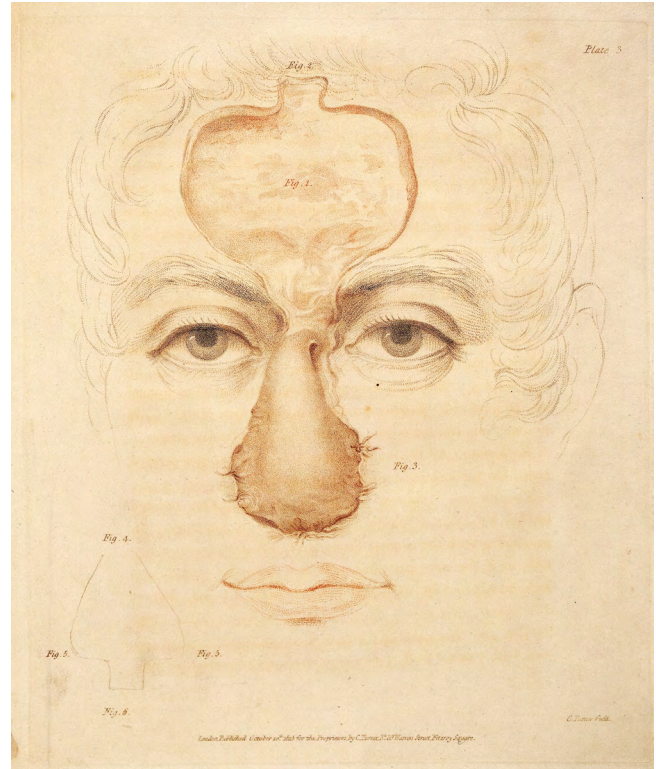
Over time, the forehead flap became the preferred technique for nasal reconstruction.

Families in India, such as the Kanghiari family, passed down rhinoplasty techniques through the generations during the 14th and 15th centuries. Though details about the transition from the cheek to the forehead flap remain unclear, the forehead flap's superior blood supply and flexibility likely contributed to its adoption.

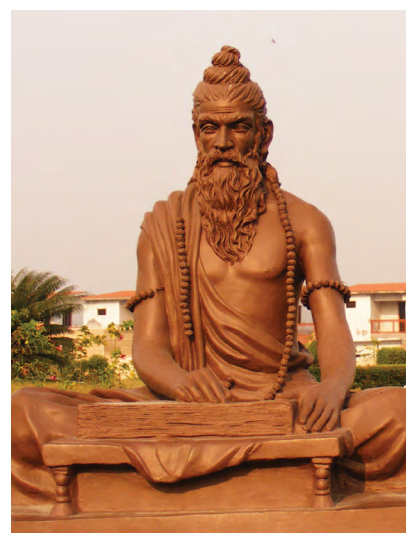
The influence of Sushruta's rhinoplasty extended beyond India. His method was translated into Arabic during the Islamic Golden Age and became known as the 'Indian method.' It spread throughout Arabian lands and Persia, reaching Sicily in the 15th century, where Branca de Branca developed the 'Italian method' using a more cumbersome pedicled arm flap.

In the 18th and 19th centuries, British colonial surgeons, including Thomas Cruso and James Findlay, observed Indian physicians performing rhinoplasty with the forehead flap. These observations, documented by Joseph Carpue in 1816, brought the technique into European practice, establishing it as a reliable method in Western reconstructive surgery. Sushruta's contributions extended beyond nasal reconstruction to other facial and body deformities, with his detailed use of skin grafts, sliding flaps and pedicle grafts laying the groundwork for modern plastic surgery.

While the exact history of the transition from cheek to forehead flap remains speculative, the Indian method of rhinoplasty has left an enduring legacy in the field of reconstructive surgery.



(Top) Figure 1: Hand-coloured engraving by Charles Turner of a successful nasal operation in an Indian Army Officer from Carpue's 1816 book. ©Wellcome Collection.



(Left) Figure 2: Statue of Sushruta, in Patanjali Yogpeeth, Haridwar. CC-BY-SA.

References

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