



ISSN: 2230-9926

Available online at <http://www.journalijdr.com>

IJDR

International Journal of Development Research
Vol. 6, Issue, 03, pp. 7111-7112, March, 2016

International Journal of
DEVELOPMENT RESEARCH

Full Length Research Article

LEECH THERAPY AFTER RECONSTRUCTIVE SURGERY

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ARTICLE INFO

Article History:

Received 19th December, 2015
Received in revised form
28th January, 2016
Accepted 24th February, 2016
Published online 31st March, 2016

Key Words:

Science of life
Parasurgical
Haematoma
Reconstructive Surgery.

ABSTRACT

Ayurveda, Science of life, whose traces can be found in the earliest scripts of India, is steeped in the prehistoric tradition. Ayurveda has got eight speciality, among them shalyatantra [surgery] has been important and modified branch since ancient era. Acharya Sushrut, known as the father of surgery, described Sandhan Karma, which can be correlated with plastic & reconstructive surgery in recent times. Acharya Sushrut, an ancient great Indian surgeon, described certain surgical ethics & principles in his original surgical text "Sushrut Samhita". There are 60 procedures and 08 surgical procedures to treat the disease. Among them "Sandhan Karma" is used in reconstructive surgery. Raktamokshan [blood letting] has been important parasurgical therapy since ancient era. Leech application [Hirudo therapy] is also being used world wide for blood letting. Leeches, known as Hirudo Medicinalis, is used most often in inflammatory conditions, trauma, wounds and thrombotic conditions. Hundreds of years ago, clinicians around the world relied on leeches to treat many medico-surgical conditions. In ancient India, Acharya Sushruta, the father of plastic surgery, mentioned certain plastic & reconstructive surgical procedures in his original text. Particularly, he advocated leech application in post operative non healing or complicated graft/flap. It also help to reduce venous congestion and to resolve haematoma. The aim of study is to review Leech application [Hirudo therapy] after reconstructive surgery in historical [vedic] and Ayurvedic texts and compare it with today's plastic & reconstructive surgery.

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INTRODUCTION

Leech [Hirudo] therapy is widely used important procedure of Raktamokshan [blood letting]. It is considered to be half treatment in certain surgical conditions. In Ayurvedic surgical science, Acharya Sushruta, the father of surgery and plastic surgery has given prime importance to blood letting by leech application. Plastic & Reconstructive surgery is a highly modified branch of surgical discipline, which deals with repair, reconstruction and replacement. The world plastic means mould.

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Among three main texts of Ayurveda [brihatrayi], Sushrut samhita particularly deals with surgical skills & knowledge. It is a constant source of surgical knowledge since ancient era. Acharya Sushruta mentioned about various surgical & parasurgical operative procedures like Udarpatan [laprotomy], removal of urinary bladder stone [perineal cysto lithotomy], linganash [cataract], caesarean section, sandhan karma. [plastic & reconstructive surgery]. Sushrutacharya used to perform various plastic & reconstructive surgeries like rhinoplasty, otoplasty and earoplasty described in sutra stan chapter 16. He also mentioned if a person lost ear lobule, then surgeon should reconstruct the ear lobule by taking a flap of skin from the cheek region with a pedicle attached to the donor side.

The aim of keeping the skin flap attached to the donor site with a pedicle to maintain the sufficient blood supply. It gives rise to vitalize the part and fast healing without complication. Further Acharya Sushruta suggested if the body is rejecting the skin graft/flap in the form of edema, pain, discharge, discoloration, congestion etc., then surgeon should apply leech on the lesion to overcome the said problems. Today plastic surgeons use leeches to rescue skin flaps compromised by poor circulation. When abdominal tissues used to create a new breast after mastectomy may also become engorged with blood that cannot find its way out of the affected area. Leeches work by removing extra venous blood and increasing blood flow to the region. During its feast, the leech injects an anti-coagulant known as hirudin, into wound, which contributes to sustained bleeding of the affected site for 5 to 6 hours after the leech falls off its own or is removed.

Hirudin, which was isolated from the leech in the 1950s, has raised awareness of the leech outside the field of plastic surgery. Enzymes present in its saliva dissolve blood clots and inhibit platelet aggregation, which has led to the creation of drugs like Repludin, a recombinant protein used to treat heparin-induced thrombocytopenia.

Excessive bleeding that requires a blood transfusion is another risk people undergoing leech therapy.

Conclusion

Obeviously, the first reconstructive surgery was performed in India nearabout five thousands years ago. In his surgical text "Sushrut samhita", Acharya Sushruta, the father of plastic surgery, described various plastic surgical procedures in details. Specially, he advocated leech application in case of post operative complication to vitalize the graft. These principles and practises are being followed by today's plastic surgeons. Hence Sushrut samhita, the surgical text written by the great ancient surgeon Acharya Sushrut, is constant source of surgical knowledge since ancient era.

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