Summary and conclusion

The cervical region is functionally and anatomically designed to achieve a maximum range in three-dimensional motion. Furthermore, the cervical area like the facial region functions as a medium to interact with human society

The neck is an essential structure as it couples the head to the rest of the body, therefore flexion contractures of the neck after burns can produce severe functional limitations and aesthetic deformities. Furthermore, in -developing children, they can impair mandibular growth. In addition, these contractures can lead to growth disturbances of the spine**.** These contractures cause major psychological problems to the patient and his contact relatives.

Many classification systems have been descried. These classification system are useful in describing severity and guiding reconstructive options.

Presumably, severe neck contractures could be prevented rather than corrected, but practically, skin contractures of the neck are difficult to prevent due to the position of function being in the flexion position

Injury from burns is very common and must be treated with considerable care by the rehabilitation team to prevent contractures that may occur. Physiotherapy is vital in rehabilitation of burn-injured patients

As regards surgical intervention, it is either early to obtain a closed neck wound and to release an early contracture or late as a definitive treatment. In early stages after burn injury where the neck area healed

incompletely and the general condition of the patients were poor, neck resurfacing using the best quality of skin flaps should not be postponed.

Before discussing the different modalities of neck reconstruction after release of post burn neck contracture, it is important to stress on the fact that, the main factor that determines the method of reconstruction is the size of the defect in which the neck is left with after release of the contracture which is the degree of neck contracture.

Complete excision of the scar tissue is the corner stone in all types of management, then , resurfacing of the neck by any type of tissue and prevention of recurrence of the contracture.

Different methods of treatment are used depending on the type of deformity, extent of burn scar and experience of the surgeon. Including skin grafts, pedicle flaps, free skin flaps, tissue expanders.

Skin grafts are a valuable option for closing defects, that cannot be closed primarily. Skin graft may cither be full or split thickness, depending on how much dermis is included. Split-thickness skin grafts contain varying thickness of dermis while a full-thickness skin graft contains the entire dermis. All such grafts contain adnexal structures such as sweat glands, sebaceous glands, hair follicles, and capillaries.

This procedure has the advantages of being the most simple and easiest. A graft can cover a wide surface area after release, an advantage which makes this method the treatment of choice in major and moderate degrees of contracture.

Skin grafts ,however, have their own disadvantages like infection, partial loss (failure of take) and the trauma associated with donor site

scratching. Colour mismatch of grafts obtained from distant donor sites (like the thigh) would represent inconvenience where the skin colour of the cervical region is considered. Wearing the neck collar or splint continuously, day and nights for 6 months is too much bothering for many patients.

Local flaps have the advantages of colour and texture match , Also there is no donor site in comparison to with skin grafting with minimal keloid or hypertrophic scar formation in case of scapular and Parascapular flaps, their dissection is easy and the donor site on the back which is usually grafted is unseen. In unusual cases it may even be primarily closed.

Local flaps, however, have the disadvantages of being able to cover only one side of the neck in patients having minor or moderate degrees of contracture, their fashioning is also difficult and may be unavailable because of scarring of the neighboring tissues. The use of preparing pedicle flaps occasionally need several operative stages which makes a longer hospital stay. The donor site of a good-sized pedicle flap usually needs skin grafting. If The patient gets obese later in life flaps brings too much bulk to areas like the neck; unfortunately, if the flap gets ischemic necrosis due vascular problem then the patient will get additional scarring.

The advantages of micro-vascular free flaps are several, the procedure saves hospitalization time, improves the comfort of the patient , allows early ambulation , provides a well vascularised flap because it is based on a well known arteriovenous pedicle and obviates the need of immobilization of patient in difficult positions

The disadvantages of micro-vascular free flaps are the flap may have an ugly scar in the donor site especially when grafted. The long operation time which is solved to some extent by the development of a team aquanted with microsurgery. The art needs skilled person and expensive equipments and the flaps used are usually bulky and need secondary Z plasty and defatting. This can be solved by the incorporation of triangular flaps of normal neck skin in the vertical borders of the free flap primarily but there is a percentage of failure.

Tissue expansion, if carefully planned and conducted, is part of the treatment of choice for post-burn reconstruction of the head and neck, allowing an expanded flap suitable for versatile coverage. The best possible colour and texture matching is ensured when the tissue expanded is adjacent to the defect. Sensation is preserved and the expansion site can be closed without problem. Expanders are available in a wide variely of shapes, sizes and capacities.

Major complication of soft tissue expansion comprise haematoma, infection, prosthesis exposure and implant failure; minor complications include seroma, pain and widening of scars.

The choices of expander location, size and shape and site of valve placement are crucial to the success of the procedure. It has been recognized that the added tissue gained with rectangular expanders may increase the choices possible for flap design (expanded flaps). Tissue expanders are used in limited contractures or scars.