Training in Speciality Itself

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TRAINING in any branch of Surgery is practical but it is more so in case of Plastic Surgery. As Sir Harold Gillies once remarked that scope of Surgery may be diminished by medicines, like treatment of toxic goitre or peptic ulcer but no problem in Plastic Surgery will ever be relieved by medicines e. g. Harelip or Web finger can never be cured by any other means but surgery.

Atraumatic Surgery :—This should be the first lesson. One who wants to be a Plastic Surgeon must train his hands and fingers to cause less trauma to the tissues. I always say that the House Surgeon who can do the dressing of a wound without causing any bleeding is best suited to be a Plastic Surgeon. It can not be worse than to damage the thin epithelial layer over an wound during dressing every other day or so. The Surgeon who wants to specialize in Plastic Surgery must learn how to use small, light and delicate instruments. The tissue should not be demaged by tissue forceps or thick dissecting forceps but should be caught by fine sharp hooks. Needles and suture materials are next in order. These Surgeons must get adopted to fine needles and fine suture materials. He should take care not to include too much tissues in between sutures etc. In one word these trainees must learn how to respect the tissues and do an operation with minimum damage to the living tissues.

Clear conception of the defect or damage to be repaired :

(1) In this context one should note that most of the defects are three dimensional and it is impossible to depict the defect in photograph alone. In many problems the defects are to be reproduced in Plaster Casts and models. Then only the 3 dimensional effect is obtained.

(b) These defects again are different from the total amount of tissues lost. Natural contraction of tissues during healing or pathological contractures make the defects different from the total amount of tissues lost e. g.

(i) a narrow scar contracture of neck masks a very wide skin loss on the under snrface of the chin and on the front of the neck.

(ii) a small opening of the cheek in Cancrum Oris will only reveal its total defect of the 3 layers of tissues when the margins are paired and three layers are separated.

So one must have the conception of the total tissue loss on examining a defect. Where a corresponding part is present on another side, then this assessment is easier. Otherwise one has to compare the same area on a similar body.

Once the total assessment of the defect or damage to the tissues is made and is recorded in photograph casts, then the question of repair arises.

Replacement of tissues lost or damaged:

Next point in the treatment of the defect is to find out suitable tissues to replace the lost ones. Here in lies the main charm in the training of a Plastic Surgeon. Each tissue in each defect can be replaced in more than one way. The best Surgeon is he who can replace the best substitute in quickest possible time. The best substitute again has to match the texure, consisteney and colour. Take for example a a simple injury of the loss of a finger tip (pulp only). The lost tissues are skin and some amount of fibrofatty tissues. This injury can be repaired by :

(1) Full thickness or split thickness skin graft.
(2) Cross finger or cross palm flap.
(3) Skin flap from opposite forearm.
(4) Skin flap from abdomen or chest wall.

The full thickness or split thickness skin graft will cure the injury in quickest time. It will help in the regeneration of the sensation of the finger tip to a great extent. But the finger tip will look flat and will be more sensitive to pain and pressure. In one word although the time is gained and some more sensatious are gained but the deformity persists and the finger tip becomes weak and unstable. But when the finger tip is repaired by the 2nd method i.e. cross finger or cross palm flap, then the finger tip gets exactly what was lost. It gets the skin and the similar type of fibrofatty tissue. It gets the skin whose sensory pattern is same as that lost. The contoural deformity is corrected, the finger tip looks normal, but the return of sensation is a little less than the first method. But the protective sensations of pain, touch etc. regenerate and the finger is hundred per-cent useful.

The third method again gives fairly good cosmetic cure except for colour match but return of sensation is very poor. Although this method may have to be accepted when many fingers are involved but results are not satisfactory. The fingers remain liable to further damage because of poor sensory return.

So this decision of getting the proper tissues in the right way is the most important single item in the training of a Plastic Surgeon.

Tissue to be replaced are taken in most problems from other parts of the same patient but the following two materials are sometimes taken into account:

(1) Homografts, or Heterografts. Skin, bone or Cartilage from other persons are being used. Nerves, tendons and blood vessels are also used.

Heterograft Skin, bone and cartilage from other animals especially developing pig skin is being tried to cover raw surfaces in burns.

(2) Inert transplants :

Elicon, Silicone, surgalay mesh etc.

These inert materials are utilized to increase the strength of the protective layers :

i.e. Surgalay mesh for repair of ventral

hernias. Some of them are used to improve the contoural deformities i.e. Silicone for augmentation mammaplasty or Silicone blocks for contoural deformities of nose, cheek, forehead etc.

(3) Last but not the least is the rehabilitation of the repaired part and the whole patient. Skin when grafted takes some time to develop sensations and normal secretions. So the part has to be kept protected. Besides the different methods of fixation of the limbs require massage and moves etc or even manipulation to bring back the normal range of movement and activity.

If one keeps all the four points in mind the actual training of the Plastic Surgeon becomes easy. No doubt that the young house surgeon better start with a back ground of General Surgery. Then he should come on the staff of the unit. Even when the same House Surgeon becomes a post-graduate student, if he does not work in the unit, the training can not be completed. The reason is that the most important criterion of good training in surgery is to examine a patient, decide the course of treatment, perform the actual operation and observe the result of the operation in short time and in the long term follow up. Long term result is the most important single criterion of success in plastic surgery. It is no good to be pleased when a scar looks fine 7 days after an operation. The scar may thicken or widen in another month or so. But if the scar looks decent after 3 months, then the success can be recorded. So unless a students works as a staff member and works for years, he can not observe the four criteria for good training. The minimum period of such training should be 5 years. Two years of house surgeons hip as a preparatory to the post-graduate studentship, then two years as a post-graduate student for a post-graduate degree. Lastly one year after post-graduation as a developing independent Surgeon. First two years he should watch and study the procedures adopted in the treatment of the patient and assist the surgeon. Then he should be allowed to carry on minor operation under guidance. But after post-graduate training and degree the surgeon should be given full independence to carry on the complete treatment of some of the patients. By complete treatment it is meant that he would estimate the defects find out means to replace the lost tissue, do the actual operation atraumatically and follow up the patient for complete return of function and finally his rehablitation.

Once a training Surgeon satisfies all these, then he should be given independent charge and be allowed to train students.

Actual training of a Plastic Surgeon should include the following two extra academic qualities :

(1) Photography.
(2) Some principles of art e.g. casting, moulding, painting etc.

These are the only two methods by which a record of the defects in the patients can be maintained i.e. by photographs and casts or plaster models. So a training Plastic Surgeon should acquire these two qualities otherwise he may loose a lot of his records—Agreed that a good Plastic Unit should have Photographer and Artist in

their staff but in this country or in other developed countries, the man in charge should always acquires these two qualities.

Medical Photography

Medical photographhy has a considerable degree of speciality. It has to be taught and practised. i.e. good photographs of pock marks unless the light is cast obliquely on the face, the pock marks do not show well in the photograph. Similarly there are many other problems which have to be taught.

Musuem

A well laid museum of the pattern present in Bangor Hospital, the Plastic Unit of the Edinburgh University is almost indispensable for good training in Plastic Surgery. Plaster models and photograph showing different defects and their treatment, or showing the details of different procedures of surgery are exceedingly useful for the practical training of a budding plastic surgeon. I am sure that every unit in this country will start building up of such a museum.