

A Review of Pressure Sore Treated Surgically at A Plastic Surgery Unit

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Management of pressure sores has always been a problem across the world but especially in our country due to lack of supporting measures. This study looked at the repair of 34 pressure sores over a period of two years at Plastic Surgery Department in Services Hospital and their outcome. A new reusable flap for reconstruction was found to be effective but rehabilitation program was found to be the ultimate decider of the long-term outcome of these pressure sores.

Key Words: Pressure sore, plastic surgery

Pressure sores are a recognized problem, an expensive epidemic, not only in Pakistan but also prevalent throughout the world. Prevention is obviously the key note but early recognition of the patients at risk coordinated with the treatment directed towards definitive surgical care along with planned rehabilitation are the few objectives one must achieve in order to tackle this problem.

This retrospective study over a period of the last two years, in Department of Plastic Surgery Services Hospital, Lahore looked at various ways and means of repair and the eventual outcome of the results achieved.

Materials and methods

The group of patients in this study was relatively young ranging from 20-71 years with an average age 39. We treated 23 patients with 34 pressure sores with male to female ratio of 2:1.

The commonest pressure area were ischial, sacrococcygeal and trochanteric in the order of prevalence. The basic causative pathologies were multiple sclerosis and paraplegia due to many reasons (Table 1).

Table 1

Multiple sclerosis	3
Paraplegia	
Trauma	16
Spina bifida	6
Tuberculosis	4
Spinal artery thrombosis	1
Achondroplasia	1
Syringomyelia	1
Total	34

Their total hospital stay ranged from 1-10 weeks with an average of 6 weeks. A variety of techniques were employed to repair these sores. Primary closure, where applicable, was the treatment of the choice. A number of flap reconstruction were performed in cases where primary closure was not desirable due to increase risk of recurrence from high degree of tension on suture line. In the ischial pressure sores, which are the most prevalent and notorious in terms of recurrences, we found as light modification of the posterior thigh flap in shape of V-Y advancement was a very versatile procedure.

Protocol followed for patients

All patients with pressure sores were assessed on admission regarding their nutrition status by clinical and biochemical parameters. Measures were taken to restore a positive nitrogen balance as quickly as possible. The pressure sores were excised using "Pseudotumour" excision technique including underlying prominent spiky bones, after packing the cavity with rolled gauze soaked in betadine or methylene blue/saline. Suction drains were left in situ for minimum 10 day, the non-absorbable monofilament sutures to skin were left for 3 weeks. The patients were nursed on a position opposite to the site of repair. A dedicated person from physiotherapy department saw every patient.

Results

In this study we recorded 5 partial dehiscence of the suture line which healed spontaneously following conservative treatment. One repair site was completely broke down while the patient was still in-patient. There were 3 recurrences (all ischial) in the 18 months of follow up.

Discussion

Pressure sores are the manifestation of immobility due to anaesthesia resulting from disease or injury. These are intractable problems, demanding high quality nursing care, combined involvement of physician and surgeon at some stage, extensive physiotherapy contribution and involvement of rehabilitation and occupational therapist. The community has to play its own role in the acceptance of these people.

3-9.4% of hospital patients develop pressure sores^{1,2}. With the availability of the resources and expertise there have been an increasing number of patients who survive an acute or prolonged illness in old age. These are the people who are at risk of developing pressure sores. Although most of them are treated conservatively, only a fraction of them come to surgical practice. If one excludes this elderly population then comes a younger group, which develops these sores as a result of prolonged incapacitating disease or injury. These are the ones, who are at risk for the development of these recurrences after a surgical repair.

Our study showed a male predominance with ration 2:1 with females, in contrast to most studies, which

invariably have elderly female population due to increased incidence of broken hips in the old age. This however may be due to increased susceptibility and incidence of injury in the male population.

Knowledge of sites of predilection is important in terms of treatment, prophylaxis and eventual outcome. The most common pressure sores in our series is ischial (456%). In a review of 1604 pressure sores in paraplegias³ reported the maximum incidence in ischial areas. They are the most common to breakdown and frequently recur. In a follow up of 100 paraplegics the recurrence rate was 44% at 4 years after surgery⁵ and in a similar series by Griffith & Shultz⁶ the commonest recurrent site was ischial out of 73.

All recurrences in our series occurred in ischial regions and predominantly in patients who had excision and primary closure. Two recurrences occurred in patients who had flap reconstruction. Although excision and primary closure in the method of choice but where applicable if there is not enough healthy tissue available to achieve primary, longer lasting closure, were lied on local flaps. We however feel that bringing healthy tissue without any tension at the repaired site brings an accelerated phase of healing and more padded tissue which can sustain high degree of pressure for a prolonged period of time.

In the ischial region we did modify the posterior high flap originally described by Hurwitz⁶ into a V-Y rotation advancement flap. Tobin⁷, described V-Y advancement flaps as potentially reusable flaps in hamstrings, gracilis and lumbar flaps. We have used posterior high flap for recurrent ischial ulceration with success and agree with the principal of Tobin. It is not only reusable but it leaves other future options open and does not affect the boundaries of the flaps. Hamstring musculocutaneous flaps⁸ or Biceps Femoris myocutaneous advancement flaps.

The main reasons for recurrences are the same as those of for initial ulceration. The pressure sore is the result of impairment of blood and lymphatic supply to an area of skin and subcutaneous tissue due to compression, abnormally prolonged contact time and the shearing forces acting between the body and the surface supporting it. There are some other intrinsic factors related to patient's disease process that may also be responsible⁹.

The most important causative factor in the pathogenesis of these sores is the external pressure. The studies by Munro, Kosiak, Daley^{10,11,12} all indicated that eventual ischaemia due to abnormal pressure is the main factor responsible for pressure sore development. These can be circumvented by either highly skilled nursing care, which adds demands to already overworked nurses, or by the availability of pressure relieving bed mattresses. Indeed with the modern bed technology now available, the tiring regular manual turning of dependent patients by hard-pressed nurses attempting to prevent pressure sores

should have become a practice of the past. The cost of pressure sore case has been estimated to have risen from sixty million pounds in 1973 to one hundred and fifty million in 1982 in U.K.¹³

A study in St. Bartholomew's Hospital, estimated cost for a patient with hip and gangrenous sacra or for a period of 180 days staying hospital was 25,905.58 pounds¹⁴. It is prudent to accept and act on the basis that this is not simply a nursing problem but also requires a plane and coordinated approach by clinicians and administrators. The latter must be more willing to release funds for the planned and cost effective purchase of pressure relieving mattresses, and beds, now available as a part of the new technology¹⁵.

Conclusion

This is an expensive epidemic, which remains hidden under the sheets. It needs extensive cooperation and planning by health administrators and clinicians. A low number of recurrence and cost effectiveness should be the objective. It is a team effort in which clinicians, physiotherapists, rehabilitation and occupation therapists have their own distinctive role.

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