

Case series:

Side effects of phenytoin: Case Series

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Abstract

Non-healing or chronic wounds cause significant stress to clinicians ,the search for a perfect wound-healing agent is one of the biggest challenges in medical practice. The ideal wound healing agent has eluded clinicians and surgeons for centuries ,many have been tried specially in cases of large abscess cavities like Povidone-Iodine ,Ointments etc. We presented a small series of cases where we used the side effect of a routinely used drug that is phenytoin to accelerate the wound healing in abscess cavities of children.

Keywords: phenytoin , Chronic wounds

Background:

Non-healing or chronic wounds cause significant stress to clinicians ,the search for a perfect wound-healing agent is one of the biggest challenges in medical practice. A common side effect with phenytoin therapy for epilepsy is gum hyperplasia and this stimulatory effect on connective tissue sparked its use in wound healing. In 1939 Kimball first observed that gingival hyperplasia occurred in patients treated with phenytoin; this stimulated research for potential use of phenytoin in wound healing. (1)

Case series:

Three patients aged 2,1 and 3 years respectively had abscesses drained under GA at our centre and were subsequently dressed with diluted phenytoin everyday .Granulation tissue formation was accelerated in all three leading to the quick healing of the three patients.

1. A 2 year old child presented with gluteal abscess was drained .Post op even after 1 month of dressings there remained a sinus with discharging thin serous fluid .Repeat USG revealed sinus tract in subcutaneous plane .Curettage of sinus tract under LA was done and tissue was sent for Biopsy and CBNAAT to rule out Tuberculosis or malignancy which was negative .
2. A 1 year old with large abscess over back extending from the level of C7 till L5 in subcutaneous plane.
3. A 3 year old female with multiple abscess over her body.All the cavities were washed with normal saline and dressing done with diluted phenytoin.

Shapiro carried out the first controlled clinical trial with phenytoin in 1958, finding that periodontal patients with surgical wounds pretreated with oral phenytoin had less inflammation, less pain and accelerated healing (2).Other investigators have extended the use of phenytoin in wound healing to topical treatment of periodontal disease and chronic ulcers as well as second degree burns to some success.

Researchers have observed that characteristic action of phenytoin on wound healing involves reduction of oedema and inflammation, easy separation of slough, increased fibroblast proliferation and collagen production leading to acceleration in the growth of healthy granulation tissue in an infected abscess cavity (3).The

mechanism by which phenytoin leads to reduction in local oedema is thought to be due to its anti-inflammatory action, its ability to stabilize cell membrane and reduce calcium-dependent release of various cellular products. The reduction in the bacterial colonization and infection could be because of a direct or indirect effect of phenytoin those being local pH changes, improved local circulation. (4) (5)

Bhatia et al described phenytoin to promote healing of various Chronic ulcers (6) They thought more clinical trials were needed to consider phenytoin as a mainline wound healing agent. Phenytoin was tried in the treatment of gluteal abscesses secondary to intramuscular injection by Lodha et al. The control patients were treated with eusol (15 %) and urea solution (4 %). The same degree of reduction in wound area was achieved in the phenytoin group at 10 days and in the control group at day 20. (7)

Bharadva PB et al concluded that topical phenytoin dressing forms healthy granulation tissue quicker and decreases bacterial load in the wound, Therefore they said that topical phenytoin moist wound dressing can be considered as a superior and cost effective option in the management of diabetic ulcers (8)

Yadav et al proposed that phenytoin may also be useful in enhancing the healing of clean surgical wounds, it was compared with an occlusive dressing (Opsite™) and topical soframycin in the healing of split thickness skin autograft donor sites and was found to be superior to the others. (9)

Conclusion:

The take home message is that phenytoin is a novel and effective agent in accelerating the healing of abscess cavities and Chronic ulcers/sinuses.

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