

HYALURONATE-IODINE COMPLEX NEW METHOD IN COMPLICATED CARDIO-SURGICAL WOUND TREATMENT

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Introduction:

Wound infection after sternotomy is an infrequent (0.5-2%) but dangerous complication of cardio-surgical procedures. It can even be complicated by mediastinitis or cardiac perforation.

We have developed new wound healing system based on combination of hyaluronate with iodine complex - **Hyiodine®**. Hyaluronan modifies inflammatory responses and positively influences wound healing. Moreover, the anti-adhesive effect of hyaluronan is combined with the anti-microbial capability of iodine. The aim of our study was to assess the effect of **Hyiodine®** on treatment of sternal dehiscence in eight patients.

Material and Methods:

Eight patients with wound dehiscence after sternotomy (3 males and 5 females) were treated during the last four years. Infected wounds were dressed with gauze immersed in **Hyiodine®** each day. Patients were treated until wound healing or definitive plastic surgery.



Application of **Hyiodine®** to gauze



Preparation of gauze immersed in **Hyiodine®**



Filling the wound with gauze immersed in **Hyiodine®**

Results:

Hyiodine® treatment led to complete wound healing in all patients. Within 2-3 weeks all wounds were dirt free with granulations. After six weeks, granulation tissue filled major parts of the defects. Complete healing without surgical treatment was apparent in 7 patients. Reconstructive plastic surgery was provided in one patient.

The mean length of treatment was 110.9 ± 77.5 days with median 68.5 days, 1st quartile 54 days, and 3rd quartile 178 days. The longest treatment (320 days) was apparent in patients whose sternal dehiscence was complicated by rupture of the right cardiac chamber.

No side effect or complication was apparent in our group of patient.

Case 1



Wound dehiscence after aorto-coronary bypass in obese diabetic patient

Case 2



Wound dehiscence after aorto-coronary bypass complicated by right heart chamber rupture

Case 3



Wound dehiscence with wire loops after cardiomyopathy in elderly woman

Case 4



Infected wound dehiscence in woman - lower part of sternum removed

Case 5



Deep wound dehiscence



11 days after initiation of **Hyiodine®** treatment



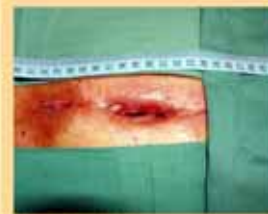
Wound dehiscence - total



Nearly complete healing after 90 days



Effect of treatment - day 7



Effect of treatment - day 27



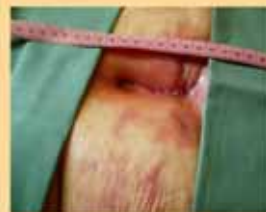
Complete healing after 165 days



Complete healing after 320 days



Complete wound healing - day 126



Nearly complete healing after 85 days



Complete wound healing - day 71

Discussion:

To our knowledge, we are the first who used sodium hyaluronate-iodine complex on wound healing. Our experience with this treatment has been for more than 4 years. We hypothesize that the healing effect of the complex is related to the activation of immune cells, to its angiogenic properties, and to strong affinity of hyaluronate to water together with the anti-microbial effect of iodine.

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