Comparative study of air coagulation, fibrin sealant, and suture in experimental liver injury.

Authors: Tovar MC, Sanchez-Valverde MA, Agut A, Laredo FG, Murciano J

Publication Date: 1998

Abstract:

OBJECTIVE: To test the effects of hot air coagulation, fibrin sealant, and horizontal mattress sutures on haemostasis and regeneration in experimental hepatectomy.

DESIGN: Randomised laboratory experiment.

SETTING: Teaching hospital, Spain.

MATERIAL: 200 rats divided into four groups (three experimental [n=60 in each] and one control [n=20]).

INTERVENTIONS: Hepatic injuries were repaired by suture, coagulation, or fibrin sealant in the three experimental groups. The control group was used only to supply baseline blood samples. 10 animals in each experimental group were killed at 3, 5, 10, 25, 40, and 60 days.

MAIN OUTCOME MEASURES: Time taken to achieve haemostasis, and histopathological scores of healing.

RESULTS: Mattress sutures took mean (SEM) of 346 (7) seconds to control the haemorrhage and allow the liver to regain its shape and 4 rats developed abscesses (7%). Fibrin sealant achieved

haemostasis immediately and the liver regained its shape in 58 (2) seconds; 2 rats (3%) developed abscesses. Hot air coagulation achieved haemostasis in 27 (1) seconds and there were no abscesses.

CONCLUSION: Fibrin sealant was the best technique because it achieved immediate haemostasis and speedy regeneration. However, hot air coagulation is a useful and cheaper alternative.