# Effect of fibrin sealant aided with Dexon mesh for renal repair in a rat model of partial nephrectomy.

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## Abstract:

Background: To evaluate the clinical efficacy and histochemical impact of a new technique of renal repair using a fibrin sealant and Dexon mesh in rats. Methods: Ten groups of Sprague-Dawley (SD) rats underwent a bilateral partial nephrectomy 30, 21, 14, 7 to 1 days before sacrifice. Renal repair was accomplished by suturing on one side and using fibrin sealant and Dexon mesh on the opposite side. The time for renal reconstruction was recorded for each approach and compared. In addition to histological evaluations, the isolated renal tissue studies included immunohistochemical analysis, and semi-quantitative reverse transcription-polymerase chain reaction (RT-PCR). Results: In comparison with suturing, renal repair using fibrin sealant and Dexon mesh was much faster. We demonstrated a significant attenuation of the initial inflammatory response in the fibrin-Dexon group. The specific alterations in transforming growth factor-beta1 (Tgf-beta1) mRNA expression were significantly lower in the fibrin-Dexon group. Conclusions: The fibrin sealant and Dexon mesh significantly simplified the procedure by reducing the time of renal reconstruction. This approach can diminish the fibrotic reaction and offers a response for renal repair similar to the suturing technique.