Intraoperative solumedrol helps prevent postpneumonectomy pulmonary edema.

BACKGROUND: Postpneumonectomy pulmonary edema and pneumonia are life threatening and seemingly unavoidable complications after pneumonectomy. We theorized that an intraoperative dose of intravenous steroids (as a prophylactic measure to reduce pulmonary injury to the remaining lung) just before pulmonary artery ligation might decrease this problem.

METHODS: Seventy-two patients (52 men) who had pneumonectomy during two time periods were studied prospectively. Thirty-five patients received 250 mg of methylprednisolone sodium succinate (Solumedrol; Upjohn, Kalamazoo, MI) just before pulmonary artery ligation (S group) and 37 did not (non-S group). Groups were matched for known or suspected preoperative, intraoperative, and postoperative risk factors for postpneumonectomy pulmonary edema.

RESULTS: The incidence of postpneumonectomy pulmonary edema or adult respiratory distress syndrome was less in the S group (0 of 35, 0% versus 5 of 37, 13.5%, p = 0.049), the overall major complication rate was less in the S group (7 of 35, 20% versus 16 of 37, 43%, p = 0.04), and the length of hospital stay was shorter in the S group (6.1 days versus 11.9 days, p = 0.02). In addition, there were no bronchopleural fistulas in the S group compared with two (both right-sided) in the non-S group.
CONCLUSIONS: The intraoperative intravenous administration of 250 mg of methylprednisolone sodium succinate just before pulmonary artery ligation during pneumonectomy may reduce the incidence of postpneumonectomy pulmonary edema and adult respiratory distress syndrome as well as decrease other major complications and shorten the hospital stay. It does not seem to increase the incidence of bronchopleural fistula. Further randomized trials are needed.