THE EFFECT OF INTRAOPERATIVE INTRAVENOUS FIXED DOSE HEPARIN DURING TOTAL JOINT ARTHROPLASTY ON THE INCIDENCE OF FATAL PULMONARY EMBOLI

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All patients who underwent primary total knee arthroplasty (TKA), revision TKA, primary total hip arthroplasty (THA), and revision THA between January 1, 1990 and December 31, 1996 were retrospectively reviewed to determine the incidence of fatal pulmonary emboli. Three thousand one hundred and twelve patients underwent 4,340 primary or revision TKA. Two thousand five hundred and thirty eight patients underwent 2,701 primary or revision THA. All total knee patients received 1000 units of intravenous heparin sodium prior to the tourniquet being inflated, and an additional 500 units of intravenous heparin sodium prior to the inflation of the second tourniquet on bilateral total knees, when indicated. For total hip patients, all patients received 1000 units of intravenous heparin sodium at the time of the skin incision and 500 units of intravenous heparin sodium prior to preparation of the femoral canal. Postoperatively, all patients received 325 mg. of enteric coated aspirin once a day, thigh high TED hose, active ankle pumps were strongly encouraged by the physicians and the nursing staff, and all patients got out of bed ambulating on the first postoperative day. No other forms of mechanical or chemical prophylaxis were used. A total of thirty (0.53 percent) postoperative deaths occurred within three months of the surgical procedure. There were fourteen (0.45 percent) deaths in the total knee group, and sixteen (0.63 percent) deaths in the THA group. Of the thirty postoperative deaths, five were noted to be secondary to pulmonary embolus. In addition, two others were considered, for this study, to have possibly had a pulmonary embolus. Thus, a total of seven patients died from probably pulmonary emboli in the study. The overall incidence of fatal pulmonary emboli after TKA was 0.096 percent and after THA was 0.16 percent. The regimen of intravenous intraoperative heparin, postoperative aspirin, TED hose, and early ambulation results in an extremely low incidence of fatal pulmonary emboli. There is no risk of postoperative bleeding, it is extremely inexpensive, and there is no concern on how long to keep the patients on this regimen postoperatively. We recommend this regimen for the prevention of fatal pulmonary emboli after total joint arthroplasty.

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