



CHAPTER V

DISCUSSION

The reports on the use of closed suction drains in knee replacements had difference idea on their benefits(22). Waugh and Stinchfield supported the use of suction drains to prevent haematomas and there by decrease infection(23). Cerise et al. and Nora et al. showed experimentally and clinically increased bacterial colonization with the use of drains(24,25)

Our study was a randomized prospective controlled study and the patient were similar in terms of age, sex, bodyweight and height after randomization. The mean BMI in both groups showed the patient was over weight ($25-29.9 \text{ kg/m}^2$). The result of postoperative wound drained in cast group were less than non-cast group. Zenios et al(26) reported a randomized prospective study of using the knee splints after total knee replacements. They found no significant difference in blood drained from the wound, knee range of motion and blood transfusion. They used cricket pad splint which allowed knee to move for some degree. In our study we used log leg cast which had more stability than cricket pad splint. The knee movement after operation was limited in cast so the bleeding from wound drain was less.

Parker et al(7) reported a Meta-Analysis of closed suction drainage for hip and knee arthroplasty. They found closed suction drainage increase the transfusion requirements. In our series the mean blood drained in cast group was 324.7 ml with this amount of blood loss, the patient didn't need blood transfusion.

Postoperative knee range of motion after total knee arthroplasty was studied. It was shown that 67 degrees of flexion was required for swing phase of gait, 83 degrees to climb stairs, 90 degrees to descent stairs and at least 93 degrees to rise from a chair(27,28) In our study, the mean range of motion after 8 weeks postoperative total knee arthroplasty in cast group was 108.4 degrees and significantly wider than non-cast group (101.2 degree) ($P<0.05$). Our study was contrast to Zonios et al(26) that showed no difference between postoperative knee splint or no splint. The mean (SD) range of motion of knees was 86.7 (15.0) in splint group and 96.3 (12.2) in no splint group after 6 weeks postoperative. Our study, we used rigid cast for immobilize after

operation and evaluated after 8 weeks so the operated knee might be better healed and good range of motion.

Willemens et al.(5) reported a randomized prospective study of 1 versus 2 days of closed suction drainage. They found that 85% of the blood loss occurred in the first 24 hours. Culture from the drain tip were positive in 25% of drains removed at 48 hours, but in none of those removed at 24 hours. In our series, we removed drain after 24 hours and there was no infection.

Wound complication after total knee arthroplasty might come from many factors. In our study, the patient BMI (cast group was 26.7 kg/m² and non –cast group was 27.3 kg/m²) was classified as over weight (BMI = 25 – 29.9 kg/m²) and it was a risk of wound infection (29) . In our study, There were 2 patients in non-cast group had wound edge necrosis. The first patient was 72 year-old female, her BMI was 28.13 kg/m² . The second patient was 80 year-old female, her BMI was 32.03 kg/m² . Both patients with wound complication was treated by conservative treatment. The wound in cast group was healed with no complication because we immobilized knee in flexion for 3 days and the oxygen tension at wound edge was better than flexed knee in non-cast group. Our results supported the Johnson's studied(16).

The prevalence of thromboembolic complications after total knee arthroplasty in the absence of prophylaxis was 40% to 80% for venographically verified postoperative deep vein thrombosis and 0.3% to 3.0% for pulmonary embolism(30). Deep vein thrombosis was develops locally in the area of deep flow with frequent initiation at the valve cup of the soleal veins in the calf. Thrombosis of the veins in the calf was generally an asymptomatic, self-limiting process that spontaneously resolves.(31) In our results, there was no case of sever deep veins thrombosis and pulmonary embolism. We didn't use venogram to verify the thrombosis, so we didn't know the prevalence of thromboembolic complication after total knee arthroplasty with cast immobilize.