

avoiding trouble. "Do this" or "do that" and all will be well. I prefer to paraphrase Ghandi on his sagacious words about peace and say "There are no roads to safety; safety is the road." The surgeon must do whatever is necessary to see well, and

there are no immutable rules that apply in every situation. However, while always being ready to respond to changing conditions and detour signs, you should keep the road map described by Nagy and Patterson in your glove compartment.

Reference

1. Downs SH, Black WA, Devlin HB, Royston CMS, Russell RCG. Systematic review of the effectiveness and safety of laparoscopic cholecystectomy. *Ann R Coll Surg Engl* 1996; 78(3 Pt II):241-323.

FIXED HINGE KNEE ARTHROPLASTY

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In reviewing their results in this issue (page 278) of hinged arthroplasty used for revision of total knee replacement, Cameron, Hu and Vyamont have returned us to the early days of total knee arthroplasty, when many of the knee designs attempted to replace the changing axis of rotation of the knee during flexion with a fixed hinge. This alteration of the normal flexion present in the anatomic knee also eliminated normal rotation that occurs during extension and flexion.

The initial results of fixed hinge arthroplasty were complicated by an unacceptably high infection rate. This was more likely due to the surgeon's learning curve for arthroplasty than to specific inadequacies in design. However, even in patients who had no infection, the hinge arthroplasty was associated with a high rate of loosening at the cement-bone interface. Several reasons have been proposed for this high rate of break-

down. It is likely that an attempt to convert the multiple axes of joint rotation present in the knee to a single axis of flexion will not be successful while the normal ligaments that guide polyaxial motion are maintained. This abnormal rotation about a fixed hinge, the lack of rotation of the tibia on the femur during full extension and the inability of the knee to glide in response to sudden impacts probably were the major reasons for the high rate of loosening.

Cameron, Hu and Vyamont have suggested that this high complication rate experienced in the early days of knee arthroplasty should not prevent us from using fixed hinge prostheses in selected patients today. There is no doubt that extreme revision problems do exist for which replacement with a fixed hinge prosthesis may be the only alternative to arthrodesis or amputation. These situations include extensive loss of bone stock due to tumour resection or bone resorption, or

trauma associated with a loose arthroplasty. If the soft-tissue envelope surrounding the knee is inadequate to provide stability with highly constrained revision arthroplasty components, fixed hinge prostheses may provide an extremity-saving solution.

However, it should be emphasized that these situations are rare in revision arthroplasty. The wide range of thick components, stemmed components and highly constrained revision arthroplasty systems optimizes the residual biologic constraint at the knee in most cases of arthroplasty revision. It is suggested that the use of a fixed hinge arthroplasty should not be part of the armamentarium of all orthopedic surgeons. Rather the use of this device should be limited to centres that specialize in revision arthroplasty. The fixed hinge knee replacement, similar to structural allograft bone stock replacement, should be reserved for exceptional patients treated in tertiary or quaternary care centres.

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