The State of the Art : Surgery of the Knee in the ASEAN Countries

The preoccupation with trauma, associated with road traffic accidents, rapid industrialisation and mechanisation of agricultural activities, and infection have to a large extent dictated the trend of orthopaedic surgery in the ASEAN countries.

In almost all ASEAN countries there has been a manifold increase in the number of vehicles, without concomitant improvement in the traffic and road systems. These have led to a similar increase not only in the number of road traffic accidents, but also an explosive increase in the severity of the injuries sustained in such accidents.

The infection of bones and joints consequent upon these injuries, as well as non-traumatic infection arising out of poor hygiene and poor nutrition, have created many problems, coupled with the management of these injuries and infections by the traditional *"medicine man"*, who continues to impose an awesome influence on our society.

Degenerative large joint disease has often been the sequelae of intra-articular fractures, with contribution also through tuberculous and pyogenic infections of joints. However, with increasing longevity and a gradual increase in the geriatric population in our countries, wear-and-tear arthritis is becoming increasingly common, with an increasing demand for definitive treatment.

In the past 20 years or so, there has been a greater awareness of injuries due to sporting activities, both in the professional sportsperson as well as the amateur and the middle-aged who are driven by fitness fads, and there has evolved a pressing need to recognise these injuries accurately and treat them early and effectively.

In all these problems whether, it is fractures, soft-tissue injuries, or age-related wear and tear, the knee is the commonest joint involved.

We shall now look at some aspects of knee surgery and how these are influenced by local situations in our countries.

In the management of meniscal injuries, the conservative, partial excision of meniscal tears has largely replaced the total meniscectomy which was routinely carried out extensively some 15 years ago, on the strength of diagnosis based on clinical impression and arthrography. The arthroscope has revolutionised the management of intra-articular injuries, making it now possible to make accurate, visual pre-operative diagnosis. The need to preserve the meniscus whenever possible has prompted us to selectively repair peripheral tears, and this is carried out in most ASEAN centres.

Arthroscopic debridement in the degenerative knees is becoming increasingly popular, and the shaving of articular cartilage, removal of loose bodies, and partial resection of degenerated menisci are carried out in many centres in our region. These are mainly in patients who are reluctant to undergo more extensive surgery, partly because of the high cost of prostheses currently available. The collective impression is that arthroscopic debridement produces excellent results in some 80% of patients, with improvements in pain, and functional activities, lasting for a variable period of time, some up to 5 years.

Severe intra-articular fractures of the knee with gross internal derangement, cartilage injury and ligament damage are seen frequently in our countries. These patients are invariably young males, and the majority of them are motor-cyclists. The large number of motorcycle riders in our countries, a cheap and convenient means of transport, the lack of safety features in these vehicles, the lack of protection to the riders and the reckless manner in which they ride, have contributed to the immenseness of the problem. Advances in the technique and instrumentation in fracture fixation has helped to restore some of these seriously injured knees.

Sports injuries in our countries have gradually come to be recognised as a special entity. While in the years gone by sports injuries had been treated by traditional methods in our countries, a greater awareness of the nature of the injuries and the pressure by sportspersons and officials to return

these victims as quickly as possible to their previous level of activities, coupled with the knowledge and technical facilities which have made diagnosis, definitive treatment and rehabilitation effective, have placed sports injuries in a pivotal position.

Similar to other countries, the knee is the most frequently injuried joint in sports in the ASEAN region, where football (except in the Philippines) is a national past-time, and ligament and cartilage injuries occur commonly. Sepak takraw, in which players assume some incredible, acrobatic postures, squash, rugby and rarely non-contact sports like volley-ball and badminton produce severe ligament injuries. Sports injuries in our countries come to the medical practitioner very late (and even later to the orthopaedic surgeon), being managed initially by traditional masseuses with aggressive massage and herbal medications, often producing infected, allergic skin reactions and further haemorrhage into the joint and in the muscles around it. Traditional treatments of this nature accord local relief and short term comfort and a false sense of well-being.

The unstable knee is a nightmare to the aspiring sportman, or to those whose livelihood depends on sport and physical fitness, like in soldiers. While uncomplicated antero-posterior instability due to cruciate rupture has received considerable early attention, with the development of various surgical repair procedures, rotatory instability with collateral ligament and capsular incompetence is often not easy to treat. In our countries, late ACL reconstruction has been carried out with techniques eponymously associated with Hey Groves, Mackintosh, Jones and Insall. The Jones procedure, or its modification, using patellar tendon, seems to be enjoying wide acceptance in our countries. We have now started using synthetic ligaments, like Goretex, but their exorbitant cost limits the use of these to special salvage situations, like in failed autologous ligament reconstruction or re-rupture of reconstructed ligament.

Degenerative osteoarthritis of the knee in our country is mainly due to age-related wear and tear, and in the younger subject, due to repeated intra-articular trauma or as a sequelae to total meniscal excision some 5 – 10 years previously. Rheumatoid arthritis producing severe knee joint and ligament damage is also encountered, sometimes with severe deformities. Secondary osteoarthritis following healed pyogenic or tuberculous infection is seen fairly frequently.

The management of degenerative disease of the knee joint has gone through the whole spectrum in our countries. The reluctance on the part of some of our patients to undergo major knee surgery has to do with their habits – religious and social. The need to sit cross-legged or to kneeling prayers, or the need to squat, has often discouraged our older patients from subjecting themselves to knee surgery, lest they lose this important, extreme range of knee flexion necessary for these activities.

Tri-compartmental osteoarthritis is seem more frequently than isolated compartmental disease, probably because of the delay in seeking treatment leading to progressive deterioration.

While arthroscopic debridement has gained recent favour, synovectomy and *'house-cleaning'* procedures have been carried out through arthrotomy routinely for many years, with variable results. Arthrodesis is not a popular operation, again for the reasons given above. High tibial ostotomy for medial compartment disease with genu varus deformity has proven to be useful in the carefully selected patient, producing useful pain relief but less so from aspects of functional recovery or range of movement.

Total knee replacement in those patients who can afford it, has now attained acceptance, especially when incapacitated by severe pain, flexion, varus or valgus deformities, subluxations and gross instability, and they are willing to accept the limitation to full flexion imposed by these prostheses as a small price to pay. The Insall-Burstein, PCA, Kinematic and Rota-flex systems seem to be favoured, and lately there is an interest and awakening for unicondylar knee replacement. While the success of total knee replacement is now comparable to total hip arthroplasty, the problems with post-surgical infection in the knee is more frequent, and in our countries there is a need to stick to systems in which salvage surgery can be achieved with greater success.

In the management of malignant tumours around the knee, the present course is ablative surgery, or some times arthrodesis. Custom-made prostheses are not available to any useful extent in our countries yet.

The scope of replacement arthroplasty is limited by budgetary constraints, and in those patients who cannot afford the price, other forms of arthritis surgery are carried out, with compromised results.

Other advances in technological tools, like the continuous passive motion apparatus (CPM), cybex and computed tomography have reached our shores, and we await the MRI to enchance our

diagnostic capabilities in the near future.

Enthusiasm in knee surgery, like in everything else, should be tempered with common sense and its relevance to the patient. The arthroscope is a new orthopaedic innovation, but it is not a toy. Its use in the damaged knee should be complementary to clinical examination, and not totally replace it. While it is true that the limitation in the use of the arthroscope bears an inverse relationship to the ability and experience of the arthroscopist, it is not justifiable to utilise the arthroscope for all forms of surgery, some of which are best carried out by arthrotomy.

Similarly, total knee replacement needs to be restricted to a few well established centres in each of our countries, where good pre-operative workout, optimum operating facilities and environment and useful long-term follow-up are possible. In such a manner, the experience accrued can be built up to a useful degree, not only in terms of success but in the management of the complications and failures. This is important because in most of our countries total knee replacement is not a frequently performed operation.

Sports injuries need to be accurately diagnosed early and treated early and carefully. This is a specialised field and should be attended to by an orthopaedic surgeon with special interest, as the results of treatment have a direct, long-term influence on the livelihood of our sports people.

In conclusion, knee surgery is enjoying a period of resurgent enthusiasm in our region, and spurred on by the exciting global advances being made in this challenging field, the interest will continue to gain strength in the years ahead.

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A.K. ABDUL HAMID, MBBS FRCS Ed., MCh. Orth.
Department of Orthopaedics & Traumatology, Faculty of Medicine, University Kebangsaan, Kuala Lumpur, Malaysia.