INTRODUCTION

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At the present time there is an epidemic of LBP in most industrialized countries, (Nachemson, 1985). LBP affects 80 per cent of all adults at some point in their lives and is the most expensive ailment in the most productive element of society, the 30 to 60 year age group, (Nachemson, 1976). Population studies have shown that most people suffer from LBP at least at some time during their lives, (Hult, 1954). LBP may be associated with a variety of causes. These patients are subjected to a large number of diagnostic procedures with ambiguous or unrevealing results. This reflects inadequate clinical and a failure to utilize information obtained from properly conducted history and physical examination, (Shearn, 1987). Despite LBP being such a common complaint, its investigation has, until now, been rather sparse. Our knowledge concerning the etiology, natural history and treatment of LBP is quite inadequate, (Joukamaa, 1987). Unfortunately examination of the joints, particularly of the spine, tends even today to be relatively badly tought in our medical schools. Young trainees in pre- and postgraduate medical education seldom get an opportunity to familiarise themselves with the basics of spinal examination unless they are training in one of the relevant specialities. In fact, the spine is relatively easy to examine, provided the examination is performed systematically, (Williams, 1990). It is, therefore, essential that all medical data be carefully reviewed, including hospital records, physicians' office notes, imaging procedures, electrophysiologic studies, pathologic studies, and result of psychological appraisal, (Horenstein, 1989).

The use of computers in general practice is still in its infancy, not only in the Middle East but also in many other countries, (Shepherd, 1986). However, since Alexandria Spring Orthopaedic Congress, in 1987, when Kazem and his colleagues presented " Computer Assisted Diagnosis and Management of Traumatic Knee Affections" ,untill now, forteen computer programmes were done in Benha Orthopaedic Surgery Department.

Perhaps more than any other medical specialists, orthopedists rely upon tools to perform their work. The modem digital computer is a tool with almost unlimited capacity for performing work in the area of data and information manipulation, (Kuslich et al., 1986). Although they believed that computer science is still in its infancy when compared with its potential application, great strides have been taken.

Present-day computers and computer programs offer solutions to many of the day-to-day, information-handling problem faced by the academic and clinical orthopedic surgeon. The use of computer graphics for musculoskeletal imaging and for development of orthopedic prosthetic components has emerged as an infant technology. In the foreseeable future, rapid technologic developments in generic computer graphics promise to dramatically increase the availability of reliable, utilitarian tools for a wide variety of clinical applications at low cost. Many orthopedic imaging and design applications that are now considered too esoteric, complex, or costly will become practical as a result of improved generality, simplicity, and cost effectiveness of computer graphics technology. Despite the predictable improvements in anatomic fidelity, image quality, and reduction in cost associated with orthopedic computer graphics, the results must justify the cost.

The information explosion of the last two decades has provided challenges as well as opportunities - both for industrialised and developing countries. de Dombal in 1986 surveyed some of the uses of information technology in medicine - in both administrative and clinical care; and look at some of the problems faced by developing countries in implementing the recent advances in medical computing. It is argued that non of the problems are insuperable; but the overriding needs are two. Clinicians in developing countries must collect relevant databanks - without which computers are useless - and international organizations must co- ordinate and oversee the process, without which the alternatives are commercialisation or chaos.

Artificial intelligence (AI) is no longer a laboratory curiosity. Computers programmed to make decisions as humans do are helping physicians diagnose blood infections, plan drug therapy for cancer patients, and interpret lung function tests. Still evolving are expert programs to help diagnose more than 750 diseases of internal medicine and hundreds more in ophthalmology, rheumatology, and clinical pathology, (Bethesda, 1985) .Expert system (ES) technology appeared in the 70's particularly with the MYCIN system, (Shortliffe, 1976), which is meant for the leukaemia diagnosis. The field of ES has been growing very fast and it is considered as one of the promising technologies applied in computer science and AI. That is why it's difficult nowadays to meet expertise domains where the ES approach has not been used or at least tried, (Marrakchi, 1987).

Wael and Kazem, the pioneers of computer science in orthopaedic clinical practice, in 1991 & 1992, stated that nowadays AI is used increasingly as a decision support adjunct for it: emulates, relieves and sometimes superceeds, human intelligence.

The coordination of the numerous computer systems which are found in present-day hospitals represents a challenging area for cooperation between clinicians and scientists, (Hill, 1984). Our collective experience with these methods in the next several years will allow judicious selection of appropriate clinical applications (Kuslich et al., 1986). With computer-based systems it is possible to produce more and more diagnostic information, but how much of this actually affects patient managements?, (Hill, 1984).