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Hand infections severe enough to warrant hospital admission

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Aims: 1. To audit the number of very severe hand infections requiring hospital admission – their incidence, causes and predisposing factors, site, treatment prior to admission, management in hospital, length of hospital stay and outcome. 2. To standardize the treatment of such infections which can cause substantial morbidity.

Methods/Results: Data was collected from patients and their files with proper consenting from February 2005 to date. All data was tabulated and results were analysed.

Conclusion: This is a basic research paper on which to improve our management of such infections.

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Hand and wrist configurations in patients with carpal tunnel syndrome

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Introduction: Most cases of carpal tunnel syndrome are idiopathic. Several studies attempted to find an explanation for the idiopathic form of this condition; including body mass index, stature and cross-sectional area of the carpal tunnel.

Aim: To investigate whether there is a correlation between hand and wrist configurations and idiopathic carpal tunnel syndrome.

Patients and methods: Sixty patients with idiopathic carpal tunnel syndrome and sixty healthy volunteers were recruited for the study. The hand and wrist dimensions of each patient and subject were measured using standard engineering Vernier callipers.

Results: The palm width was significantly greater in the patient group. There was no significant difference in hand length between the two groups. Both wrist length and wrist width were significantly greater in the patient group. The hand ratio, that reflects the difference of both the length and width dimensions of the hand was significantly lower in patients compared to controls (2.20 ± 0.13 vs 2.26 ± 0.14 ; P value 0.015). The wrist ratio, that reflects the difference of both the length and width dimensions of the wrist was significantly lower in patients compared to controls (0.61 ± 0.09 vs 0.65 ± 0.07 ; P value 0.009).

Conclusion: Patients had squarer hands and wrists than controls. Our findings suggest that the anatomy of the hand and wrist may be important in the development of carpal tunnel syndrome.

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A review of the relationship between obesity and total knee replacement outcome

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As the prevalence of obesity continues to rise in Malta knowing the relationship between Total Knee Replacement (TKR) outcomes and obesity becomes increasingly more crucial. Since a number of studies have linked obesity with the development of osteoarthritis of the knee and excess bodyweight would result in an increase in the stress transfer through a TKR to the surrounding bone, this would suggest a poorer outcome and higher failure rate in obese patients. However, whilst a number of studies show an adverse effect of obesity on TKR outcome, other studies have indicated no difference between obese and non-obese patients. This paper reviews various studies assessing the possible link between bodyweight and TKR outcome and suggests some simple measures that can be undertaken prior to and after the operation to possibly reduce the adverse effect obesity might have on a TKR's short and long term outcome.

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Biomechanical analysis of lumbar spine implants

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Introduction: Conservative approach versus surgery is an ongoing discussion for the treatment of vertebral fractures and better understanding of biomechanics in both cases is required. This requires the knowledge of the fracture implant properties that influence the success of the treatment with respect to stability as well as to the bone remodelling process. The mechanical properties of spinal implants are very difficult to obtain either 'in vivo' or 'in vitro'. Computer simulation is forming a very important tool in biomechanics since it can simulate the behavior of the spine in situations where other methods fail. The point in case is the implant – bone interface.

Method: The computer simulation by means of Finite Element Analysis investigates the behaviour of implanted spinal systems consisting of pedicle screw / nut / locking sleeve and rod construct. The vertebra is modelled assuming isotropic properties of both cortical and cancellous bone while the space between L2 and L4 vertebra is filled with cement. Three contact pairs between screw, nut and sleeve were modelled using CONTACT174 and TARGET170 elements. Applied internal loads in passive ligamentous spine for neutral standing with 0N load in hands consisted of axial compression, shear force, and sagittal moment. The static non-linear solution was computed by means of PCG equation solver using full Newton-Raphson solution procedure with force convergence control set to 0.002 tolerances.

Results: The screw is undergoing bending as expected and the bone-implant interface exhibits the variation of stress/strain along the length of the screw. Further investigation will be required at these locations.

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A profile of genetic diseases in Malta

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Genetic diseases are important causes of morbidity, but their frequency and significance in clinical practice are not adequately appreciated. Epidemiological studies on genetic disorders in Malta are very limited. This paper is an overview of genetic disorders in Malta, diagnosed over a period of twenty years in individuals attending the genetics clinic at St Luke's Hospital from 1985 to 2006. It assesses the magnitude of the problem of genetic diseases and provides a profile of their pattern of distribution in Malta. The various disorders were classified as chromosomal, monogenic, polygenic, teratogenic, and syndromic. This study evaluates the importance of the genetics services being provided, the reasons for referrals, the types of services requested, and the outcomes in terms of results, benefits and limitations of the service. It allows us to determine the types and profiles of individuals who are referred to the genetic clinic, the benefits they derive from it and the limitations experienced. It analyses also the impact and importance of the genetic diagnostic and counseling service on community health, the changing trends in genetic diagnostic technology, the counseling services provided, and the future possibilities and needs for further expansion of services.

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Linkage to a region on chromosome 11p12 in two Maltese families with severe osteoporosis

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Aims: Osteoporosis is a metabolic bone disease with a strong genetic component. A family-based linkage study was performed for the possible identification of chromosomal loci that might contain genes responsible for an increased susceptibility for osteoporosis in the Maltese population.

Methods: A whole genome linkage scan using 400 microsatellite markers