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Risk factors for long-term failure of orthopaedic medical devices: taking advantage of RSA as an early detection tool

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Risk factors for long-term failure of orthopaedic medical devices

Taking advantage of RSA as an early detection tool

1. Tibial component loosening—the major reason for implant failure—has a multifactorial aetiology (*this thesis*).
2. Cemented implants, in contrast with biological fixation techniques, are subjected to continuous loss of cement-bone interlock resulting in progressive migration (*this thesis*).
3. Biological fixation of total knee prostheses may become the standard—especially in the younger population—now that long-term migration profiles for uncemented implants are as reliable, predictable and at least as stable as for cemented implants (*this thesis*).
4. Until kinematic alignment strategies are supported by robust evidence, orthopedic surgeons should continue to aim for a neutral mechanical alignment to prevent asymmetric loading conditions and thereby increase the risk of loosening (*this thesis*).
5. A paradigm shift occurred during the last decades for the indication of total knee arthroplasty. A mismatch between patient and implant has shifted towards a mismatch between expectation and implant for the overweight, active, young individual.
6. A stepwise introduction of new surgical techniques and implants is of paramount importance to prevent major disasters and subsequent recalls of malfunctioning implants, and should include testing using highly accurate methods such as radiostereometric analysis (*Adapted from R. Huiskes, Acta Orthop, 1993; 64: 699-716*).
7. Our research agenda should now consider whether the marriage of careful 3D planning of the surgical alignment and the use of implants with potential ingrowth will result in both improved patient satisfaction and implant survivorship (*Adapted from F.S. Haddad, Bone Joint J, 2020; 102-B:965-6*).
8. Evidence-based medicine (EBM) is methodologically canalized to uniform recommendations for all patients, while ignoring treatment effect heterogeneity. This remains a central challenge to be addressed if EBM is to become more personalized and patient-centered (*Adapted from D.M. Kent, Int J Epidemiol 2016; 45: 2075-88*).
9. De onduidelijke associatie tussen klinische scores en RSA-metingen heeft voordelen voor de onderzoeker die veldwerk in Zweden moet verrichten.
10. Semper exercemus! “Wij train altijd” (*Alejandro Verga, 2012*)