

Recent Trends in Arthroplasty

Shrinand V Vaidya^{1,2}, Jitesh Manghwani²

I. Out patient total joint arthroplasty

1. It is advised bilateral THA should be in high volume centers in young and healthy patients [1].
2. The OARA score for primary TJA has more precise predictive ability than the ASA-PS and CCI scores for the same or next day discharge. However it should have a robust patient education program to establish appropriate expectations for early discharge [2].
3. With appropriately selected patients, outpatient THA is not at a greater risk of 30 days adverse events or readmission than those that were performed as inpatient procedures [3].
4. With optimized discharge protocols, shorter stays decrease costs associated with TKA. This helps in diverting the limited healthcare resources towards the patients who are more likely to leave in 1 day [4].

Editorial Comment: Day care surgery is definitely a solution to save resources & effectively lessen the burden on any healthcare model. However it has some definite pre-requisites which should be taken care of:

- a) "on call" availability of good physician -24X7-taking care of communication and complications if

any, to prevent readmissions.

- b) Trained staff to help patients with effective pain management and blood loss monitoring, immediately after the operation.

- c) Trained nursing staff-Nurse anaesthetist/Nurse Physician level in the US (Level Of B.Sc nursing in, India)continuously at home. However trying to save money shouldn't be at the cost of mortality/ morbidity of the patient .

II. Infection

1. It is time to develop new formulations for diagnosis and treatment of PJI. Also we need to know the implications of the same in future with current rise in PJI. [5]This is a very important and landmark editorial, by Javad Parvizi.
2. Irrigation and Debridement with exchange of Poly Liner, was successful in the majority of patients falling in a specific criteria. However it is recommended that PJI patients with MRSA or Psuedomonas Aeruginosa should not undergo Irrigation and Debridement and be treated with 2-stage revision. [6]
3. The results of this have shown a 4-fold decrease in acute PJI with the use of silver-impregnated occlusive dressings

supporting its use.[7]

4. Vancomycin if used prophylactically, should be titrated as per weight. Under-dosage without realizing the excessive weight of the patient has been a proven cause of PJI. [8]

Editorial Comment: PJI is at resurgence owing to the tremendous increase in the volume of the Total Joint Surgeries, worldwide in the last decade, with suboptimal environment. There is very important and landmark editorial, by Javad Parvizi.

Other factors ,are modalities of early detection with the discovery of tests like Alpha-defensin (Zimmer) or esterase test, or specific threshold of Polymorphonuclear counts , to aid the early diagnoses of the infection.

Caution should be taken while dealing with high virulence organisms like MRSA, pseudomonas. Over enthusiastic loading with antibiotics in these infections without implant removal should have a calculated risk benefit ratio.

Causes of infection may be multi factorial. Drugs like Vancomycin should be used with weight calibration and caution should not substitute for poor universal precautions. However with editors experience, as a part of Consensus Committee, held at Philadelphia, 2013, it is worthwhile to read complete document- www.msisa.org/international-consensus/ 1.

III. Health policies and Economics

1. In the year prior to TKA, over half of the non-inpatient costs associated with knee OA are trials of conservative management. Of which around 30% of this is due to HA injections alone. If only interventions recommended by the Clinical Practice Guidelines are utilized

¹Consultant Joint Replacement Surgeon, Hip & Knee Arthritis Clinic Global, Breach Candy, Hinduja Healthcare, Jupiter Hospitals.

²Professor Of Orthopaedic Surgery-King Edward VII Memorial Hospital, #608, Dept Of Orthopaedic Surgery, Multistoreyed Building, Parel, Mumbai, India 400012.

Address of Correspondence

Dept Of Orthopaedic Surgery, Multistoreyed Building, Parel, Mumbai, India 400012.
Email: drsvv1@yahoo.com

then the costs associated with knee OA could be decreased by 45% [9].

2. Nerve injury, dislocation, and leg length discrepancy (–from max. to min.–) are the most common reason for malpractice after primary THA. Patient education regarding the details of the risks and limitations of the surgery should be a mandatory protocol [10].

3. The use of a joint hospital-physician committee is a potential strategy for achieving lower average purchase prices for prosthetic implants. Policies to increase hospital-physician collaboration may lead to lower average purchase prices in this market [11].

Editorial Comment: Extreme conservatism to delay knee replacement, is a costly affair, may be as much as or more than the implant of the knee replacement. Editors feel, that there is no point in waiting in cases of established tri compartmental arthritis beyond 2 months with chondro protective or cartilage protective agents (including intra articular lubricants). As opposed to what we feel leading causes of law suits after THR, remain foot drop, (Not LLD !) dislocation, limb length discrepancy-in that order. While the first two are technique dependent, third is dependent on pre operative and post operative counseling. We feel that lengthening upto 5 mm is physiological and within 3 to 6 months patients can hardly perceive it-interim time may be best managed with compensatory footwear. However one must not forget the additional benefits of slightly tight hip replacement which adds to the stability at the same time.

Article by Derek Hass et al has a lot of importance especially in the view of NPPA's capping policy in our country, which has been recently implemented for the Total Knee Implants. We strongly believe that although the margins of commonly used designs of TKR implants are too high and needed

to be corrected for the mass usage, the point to be kept in mind is the amount of resources spent on a elite new technology-almost four times expensive, across companies. It may include cost of development, trials, approvals etc. We believe that the latest design, which are recently launched, should be allowed to be sold at premium cost for a duration of 3-5 years after the launch, respecting the innovation, after which capping may be applied (View purely personal).

IV. Robotic surgery

1. Robotic-assisted UKA was found to have high survivorship and satisfaction rate at short-term follow-up. Long term follow up studies are required [12].

2. Computer-assisted navigation TKA may restore biomechanics during walking that are closer to normal than conventional TKA. However apart from walking, other biomechanics are almost the same between conventional and computer assisted navigation. [13]

3. The article shows no difference no difference in 2-year outcome scores in TKAs implanted using the KA versus an MA technique. The theoretical advantages of improved pain and function that form the basis of the design rationale of KA were not observed in this study. However long term results are yet to be evaluated. [14]

Editorial Comment: Robotics and navigation definitely are the new dimension in Arthroplasty. The short term results have been promising with greater satisfaction and restoration of the biomechanics. We should analyze the technology with its outcome vis-à-vis cost of the set up. MAKO (Stryker) with Robotic Hand, for UKR, has shown very promising initial results. However very stiff cost, has kept this, out of bounds, from average Hip and Knee Surgeons.

V. Miscellaneous

1. With this study it is the call of the hour to revise the indications of unicompartmental knee arthroplasty. The results in patients who were contraindicated to UKA as per the current norms have been good or even better than the ones without contraindications [15].

2. The use of minimally invasive mobile bearing UKA is advised in patients who require higher degrees of flexion as a part of their lifestyle. However, they also showed relatively high rates of bearing dislocation and aseptic loosening [16].

Editorial Comment: The resurgence of UKR is owing to better instrumentation and precision in component position which can be checked intra operatively, both manually and with advanced robotics (Mako)

Undoubtedly Oxford knee leads the rest as “spoon jig” has made the sizing and orientation of femoral component highly precise. Adding double pegs, on the femoral component has enhanced the stability. Oxford group-Dodd et al, together with Keith Berend, and Adolf Lombardi, from Ohio, have fine-tuned the art of mobile partial knees to a fair level of perfection. The reports of studies by Thomas Hamilton [15] et al and Won Sik Choy [16] et al should definitely encourage “Non-believers” to believe in Unicompartmental or partial knee replacement.

3. Both physical as well as psychological factors contribute to dissatisfaction. Identification of these factors may help in planning focused interventions to address dissatisfaction. [17]

4. Depression and patella maltracking may be associated with lack of “Forgotten Knee” acquisition after TKA, while postoperative increase in flexion may have a positive impact. [18]

Editorial Comment: Starting with

Robert Bourne, from Canada, there are series of papers that started appearing in the literature, which talk about “Dissatisfaction”, amongst the cohorts, which are otherwise doing well as per KSS scores. KSS and WOMAC scores are not the determinants of patient satisfaction as they are narrowly put up. Further stratification of patient activities like playing with grand children, indulging in sports activities have put under the microscope the issues of satisfaction. We strongly believe that an exhaustive process of pre operative counseling followed by true limits of artificial knee irrespective of surgeon and implant must be discussed.

5. The study concludes that reaching a high degree of flexion did not influence surface damage or 3D deviation of the polyethylene inserts. [19]

Editorial Comment: Although the article is supportive of no damage occurring to polyethylene inserts during high flexion activities, it doesn't clarify, whether the knee was being loaded or unloaded. We feel that this article, stand alone, should be dealt with caution and rather follow the traditional path of restricting knee flexion to not more than 130 degrees and avoiding loaded flexion.

6. No significant differences are found between the PFC Sigma and Attune knees in KSS or satisfaction. However, the Attune group had a lesser incidence

of AKP and crepitation. [20]

7. The paper concludes that early failure at tibial base plate is owing to use of HVC cement rather than any problems with the implant. [21]

Editorial Comment: This expensive, rich inventory category of knee designs and state of art instrumentation provided, has been the target of some criticism for early debonding below tibial base plate. Together with Attune at least 6 more companies in market place have come out with this “Futuristic knees” with excellence in design, abundant sizes and unmatched inventory and superlative instruments. This paper by Ranawat et al [20] is very encouraging. We strongly feel that this is more of technique related issue rather than that of the technology. Technique of cementing and not using High Viscosity Cement (HVC) are the factors, which can make significant difference, in the quality of under tibial plate cementing. Judeth et al, have shown problems in Vanguard knee tibial base plates, when implanted with HVC cement. Same, if implanted with Palacos cement with multiple drill holes establishing micro- macro lock should be per se immune to debonding. However, to have any more emphasis in this matter we will have to wait for another 2-3 years.

8. An all-polyethylene tibial component provides excellent results in the elderly population along with a significant cost

savings. [22]

Editorial Comment: All poly is the Knee implant for all the ages, all surgical hands and all seasons. We shouldn't change just for the sake of change as posterior stabilized all poly has seen unparalleled results since 3 decades. However its use should be restricted in cases with severe bone losses & deformities more than 15 degrees in the coronal plane, which may require constrained designs.

9. Results of patellofemoral arthroplasty in patients with minimal radiological change don't have significant improvement in pain and function. [23]

Editorial Comment: Only 10 percent of the knees are pain free. Careful patient selection is a must. One must rethink before proceeding with the same.

10. Social media being a powerful tool today, a research showed TKA posts focused more on rehabilitation and wound healing than THA patients. However THA patients shared more posts on ADLs. [24]

Editorial Comment: This article innovatively used data from social media. The concern of patients clearly have been ADL, rehabilitation and wound healing.

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