Can Knee Slices Be A New Source Of Bone Allograft To Supplement Femoral Head Allograft?
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INTRODUCTION:
Bone allografts are currently becoming an integral constituent in our orthopaedic armamentarium. The major source of bone allograft procured from living donors are femoral heads. The objective of this study was to determine whether the retrieval of knee slices from total knee arthroplasties present a realistic supplement to boost the cache of allografts available from bone banks.

METHODS:
Live donors for bone allografts were divided into two groups: Femoral Head and Knee Slice groups and demographic data were analysed. The amount of cancellous bone available was analysed in terms of volumetric and weight characteristics.

RESULTS:
Sixty-seven bone samples consisting of 34 femoral heads and 33 knee slices were acquired. Patients’ gender, height, weight and history of neck of femur fractures influenced the amount of bone obtained from femoral heads. The mean volume of available cancellous bone from knee slices was significantly less than that of the femoral heads by 6.7mLs per sample (p=0.002), while the mean weight was significantly less by 7.6 g per sample (p=0.005).

DISCUSSIONS:
The volume and weight of cancellous bone retrieved from knee slices are comparable albeit slightly less compared to the bone from femoral heads. However, these do present as a viable supplement to augment the number of available grafts as on average there were a higher number of total knee replacements performed compared to the number of hip arthroplasties in our centre. However, clear guidelines and exclusion criteria need to be adopted to avoid procurement of low yield samples. We suggest for retrieval of combined bilateral TKR discard to ensure high allograft yields.

CONCLUSION:
This study indicates that knee slices provided a significantly less amount of cancellous bone than that of femoral head, however the bone can still be harvested as a supplementary source of bone allografts. Femoral head is still the gold standard of harvested bone from live-donors.

REFERENCES: