British Orthopaedic Association

Large Diameter Metal on Metal Bearing Total Hip Replacements

At last week's British Hip Society Annual Conference, in Torquay (March 2nd – 4th 2011), this topic was considered in some detail. Several units including Belfast, Southampton, Cardiff and Stockton on Tees presented well researched and audited results of these devices at short to mid-term. There was a predominance of the ASR XL device, which has been withdrawn, but large diameter MOM devices from other manufacturers may also be showing similar results.

The presented results show a higher than anticipated early failure rate. These range from 21% revision rate at 4 years (potentially rising to 35% if all currently known painful implants progress to revision) to 49% at 6 years for the ASR XL device. Other devices have a revision or impending revision rate of 12 – 15 % at 5 years.

The reasons for failure were discussed at the meeting. Concern was expressed regarding the trunnion at the 'Morse' taper where the large diameter Metal head attaches to the stem. Several revised examples showed damage but it was not clear whether this was from wear or corrosion or both. Other potential sources of problems include the bearing surface (wear) and the stem if uncemented (possible corrosion). The modes by which these components fail was described and includes loosening of the acetabular component, loosening of the femoral component or metal reaction with necrosis and soft tissue damage as previously seen in a small number of metal on metal hip resurfacing (HR) devices. Failures seem to be more frequent in females.

Patients tend to present with pain and frequently have radiographic changes as seen on plain films, including loosening and lysis. Blood Cobalt and Chromium ions are often, but not always elevated. Ultrasound and MRI scans may show fluid collections, cystic and / or solid masses which have been previously described.

We believe that the existing advice from the MHRA still applies. Patients with metal on metal bearing hip replacement should be followed up regularly for five years and probably for the life of the prosthesis. Pain in this group of patients should be taken seriously and investigated appropriately. Based on the results presented the use of large diameter metal on metal bearings in primary total hip replacement should be carefully considered and possibly avoided.

As with other Metal on Metal Revisions, procedures can be complicated if there is significant soft tissue damage and may require specialist reconstruction

techniques for revision. All patients should be thoroughly investigated as to the cause, prior to revision. An MRI or CT scan is advised to assess the local reaction / tissue necrosis / presence of pseudotumour and surgical anatomy beforehand. We would recommend if these components are revised then the components should be sent to one of the retrieval centres for further analysis.

The BHS, NJR, BOA and the MHRA all continue to monitor the results of these procedures and further updates will be issued as more information becomes available.

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