Students' Corner
Letter to the Editor

Use of metal prosthesis and risk of bone cancer

Madam, the orthopaedic implants and their fixatives contain elemental ions such as chromium, nickel, gold and cobalt. Such metals have been proved to have cytotoxic effects on human tissues.[1] Whether these implants lead to subsequent cancer development remains an arguable issue mainly because of the lack of long term follow up data.[2]

Besides dental fixatives, the common procedure for irreversible degeneration of hip and knee joints is joint replacement with metal prosthesis.[4] A study conducted in UK showed that patients after receiving metal on metal (MOM) arthroplasties of hips developed bilateral pseudo tumours, characterized histologically by extensive necrosis, granulomas and heavy lymphocytic infiltrate that was suggestive of a type 4 immune response possibly due to metal alloy components.[5]

Another major cohort study in Sweden evaluated hip replacement and subsequent cancer risk and showed that although the overall cancer risk appears to be negligible, a small rise in kidney and prostate cancer warrants further investigation.[4]

Other epidemiologic studies have also suggested a risk of lymphoma and leukaemia after joint replacement but the follow up was comparatively short.[6]

In view of the above references, it can be concluded that despite extensive usage of metal prosthesis globally, the risk of cancer development is not significant but remains a subject of concern and demands further investigation and studies. Improvements in types of materials used and long term follow up of patients is also necessary for further reduction of risk of cancer.

The development of malignant neoplasms with dental implants has been reported as a rare complication, majority being sarcomas. A case study reported a 38 year old woman developing chondroblastic osteosarcoma of maxilla, 11 months after receiving a titanium implant. Although the risk is low, a dentist must be aware of this rare but devastating complication.[3]

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