Rhesus immunization after bone allografting

A case report

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Only a few cases of Rhesus blood-type immunization after bone allografting have been reported (Hill et al. 1974, Johnson et al. 1985). Rhesus immunization in girls or fertile women may have severe consequences. We report a case of Rhesus-antibody production after bone allografting for an aneurysmal bone cyst.

Case history. A 13-year-old girl had curettage of a large aneurysmal bone cyst, which was filled with cancellous bone allografts. The bone grafts were obtained from femoral heads that had been stored at −70° C. The patient was Rhesus-negative, whereas the 3 bone donors were Rhesus-positive.

However, a complete Rhesus phenotype of the 3 bone donors could not be determined. Six months later the girl was admitted to another hospital after an accident. At routine blood grouping, the antibody screen test was positive. The specificities were anti-D, anti-E, and anti-C, and the titers were 1:64 with the indirect Coombs' technique.

Discussion

Most investigators of bone allografting consider the immunogenic component to be present both in cells and in serum within the transplant (Burchardt 1983). However, the immunogenicity of bone allografts after storage at −70° C, has been reported to be reduced (Friedlaender 1983).

The antibody finding was surprising because the girl never had a blood transfusion. The only antigens conceivable for the formation of Rhesus antibodies were from the allogenic bone grafting 6 months previously.

The girl will never have a chance to give birth to a Rhesus-positive child, which implies a limitation in her choice of the father of her children.

In 4 other cases, we also used Rhesus-incompatible transplants, but the screening test did not disclose any Rhesus antibodies. Our observations suggest that Rhesus-compatible allografts should be used in girls and fertile women.

References

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