Does Sludge / Debris Exist in Today’s Vascular Access Ports

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INTRODUCTION

In the mid-1990s, the issue of sludge in totally implanted vascular access ports was a topical issue. Investigation at that time, by the primary author, demonstrated that sludge existed yet the relationship of sludge to complications such as intravascular device-related bloodstream infection, occlusion, and patient outcomes were not studied.

METHODS

Personal, a mailing was sent to the AVA membership describing the study and requesting that explanted ports be sent to Norfolk Medical for examination. All HIPAA guidelines were followed. An Incentive was offered for each Implanted port (illustrated in the pictures below). A mailing was sent to the AVA membership describing the study and observing recorded.

The study was undertaken as a limited uncontrolled study. There were no exclusion criteria. Explanted ports were received from several US states and Canada. The results of this study indicate:

1. Sludge does indeed exist – 18.6% of explanted vascular access ports examined had sludge in the port chamber
2. Sludge was found in ports from all manufacturers submitted in the study
3. Sludge does not have a common appearance - Gross examination revealed that some sludge is dull and irregular, some bright and smooth with evidence of what appears to be crystals as well as irregularly colored and white “areas” within the sludge

The study was undertaken by a private organization and more than 1,000 requests to participate were mailed to AVA members and others. Participation (explanted ports sent to us) represented 1/3 of the total mailing.

No data was gathered with the exception of 1 implantation time prior to removal and 2 results were documented with photographs and report of findings on gross inspection.

CONCLUSIONS

Concern, prevalence and prevention of intravascular device-related infection has been at the forefront of clinical research for more than a decade. A correlation between thrombotic complications and infection is accepted. A review of the literature shows rates of partial occlusion of up to 33%, and total occlusion up to 28% in implanted vascular ports. Occlusion is the most frequent complication. The consequences of occlusion are delays in treatment, rehospitalization and treatment with thrombolytics or device replacement. Sludge as risk factor for infection and occlusion has not been well studied and is mentioned in only 5 articles in our review.1,2,5,6,7

The authors found a paucity of implanted vascular ports in the literature in the last ten years, studies undertaken focus on implantation related complications rather than patient complications such as occlusion and infection.

REFERENCES

12. Longuet (2001)
17. Douard (1999)
18. Longuet (2001)
20. Natan Pheil is an engineer and employee of Norfolk Medical, Inc.

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