Field Conservation of Bone

Comparison of Consolidants

Debbie Kinstlers
A Good Consolidant Should…

- Adhere properly and impregnate well
- Be both strong and flexible
- Be non-toxic
- Have both short and long term reversibility
- Not affect the colour of bone
- Have high concentration in low viscosity
Acryloid B-72

- Comes in pellets dissolved in solvent
- Spreads easily and penetrates quickly
- Dries quickly, and is stable
- Can make bone brittle
- Difficult to apply to cancellous bone by brushing on the consolidant
- Dries to a glossy finish on cortical bone
Acrysol WS-24

- Very small particle size allows for good penetration of fragmented bone
- Is non-toxic and the pH is close to neutral
- Good for damp to dry material
- Prevents cracking and spalling
- Penetrates well on cortical bone
- Can be mostly removed with acetone
But the down side…

- Only penetrates cancellous bone well during emersion, which takes significantly longer to dry
- Difficult to reverse with porous materials
- More than one coat will leave cortical bone with a semi-glossy finish, and cancellous bone with a glossy finish
Butvar B-98

- Powdered form
- Adds strength, but still flexible
- Stable with good aging characteristics
- Dries translucent
- Light
- Soluble in several solvents
However...

- Brushing this on cancellous bone will cause damage
- This was the only drawback noted by Kres and Lovell in their comparison of consolidants
Rhoplex AC-33

- Liquid acrylic resin
- Can be diluted with a number of solvents
- Colourless
- Durable and stable
- Can be used on saturated bone
But on the other hand…

- Has a pH of 9.6
- Leaves excess solution on bone surface
- Good coverage hard to obtain
- Leaves a glossy or semi-glossy finish on bone
- If used too concentrated it can crack and exfoliate bone
In Conclusion

- For wet bone in the field, Rhoplex AC-33
- For dry bone, Butvar B-98
Further Reading


Further Reading Con’t
