Vascular Access Ports (VAP)

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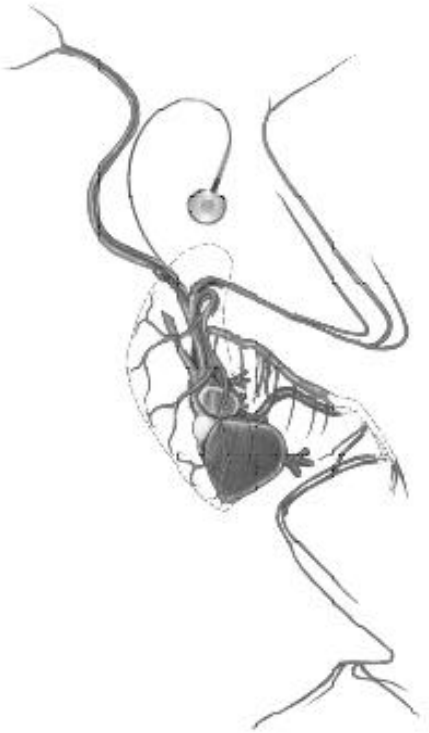
VAPs are completely implantable vascular access sytems that allow repeated vascular access with minimal restraint for blood sampling or IV injection. Once implanted, they require minimal maintenance and can be maintained for many months.



Technical bits

VAPs are composed of a polypropylene or silicone catheter and an injection port. After venotomy and catheter implantation, the port is secured subcutaneously at the chosen site. The port is subsequently accessed through the skin, causing minimal discomfort to the bird.

Catheters are available in 1 to 6 French (for a sense of scale, a 4 French suits a galah jugular vein). The entire units have an internal volume of approximately 0.3 ml and are guaranteed for 1000 needle sticks. The units are re-usable following autoclave or EtO sterilization (depending on catheter type).

Comparison of VAPs and other venous access methods

	Repeated venepuncture	IV catheter	IO catheter	VAP
Stress	Moderate	Moderate	Moderate	Minimal once implanted
Risk of bird removing	N/A	High	Moderate	Negligible
Infection risk	Minor	Minor	Minor	Minor
Ease of vascular access	Skilled operator required. Limited punctures	Easy	Easy, but injection only	Surgical to implant then easy.
Range of drugs injectable	All	All	No tissue irritants / toxins	All – rapid dilution
Cost	Minimal	Low	Low	High

Potential complications

The complication risk associated with VAPs is low in comparison to other venous access methods. Possible complications include:

1) Thrombosis. This is the most common complication and most commonly occurs with implants that remain in place for greater than 30 days. The risk of thrombosis can be reduced by using polypropylene catheters.

2) Catheter blockage. This is most likely to occur if inadequate heparin "locks" are used. Heparin concentrations ranging from 100 IU/ml to 2000 IU/ml have been used. To mnimise the risk of heparinisation of the bird, the port can be flushed with saline after use before placing the lock. Before using the VAP, it is important that the lock is withdrawn and discarded rather than flushed into the bird.

3) Bacteraemia. This is most likely to occur in chronically placed implants (>300 days). In chronic implants, bacteraemia may occur in up to 10% of cases, but septicaemia is rare.

Avian applications

VAPs may be of value in many emerging areas of avian medicine including:

- Chemotherapeutics
- Chronic drug administration
  - Aspergillosis
  - Mycobacteriosis
  - Emerging diseases and therapies
- Total Parenteral nutrition
- Research

References

http://norfolkaccess.com

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