Challenges in Hemostasis for Iatrogenic External Iliac Artery Injury

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Background

Covered stents are commonly employed for arterial injury, with VIABAHN being the only covered stent reimbursed for peripheral vascular injury in Japan. However, its radial force and size limitations can compromise hemostatic efficacy, especially in iliac arteries. We present a case in which multiple endovascular strategies were needed for iatrogenic external iliac artery injury.

Case Presentation

A 70s male patient sustained right external iliac artery injury during catheter manipulation. An 8.0 mm VIABAHN was deployed initially, but bleeding persisted. Due to the unavailability of another 8.0 mm stent, a 7.0 mm VIABAHN was used but also failed to achieve hemostasis. A VBX balloon-expandable covered stent was then deployed to buttress the previous stents, but bleeding continued due to malapposition at the distal edge. An additional VBX was deployed distally, achieving temporary hemostasis. However, the following day, contrast leakage at the proximal edge was observed, likely due to vessel shrinkage. Another VBX was placed proximally, finally securing hemostasis.

Discussion

Although VIABAHN is the default option under Japanese reimbursement policy, this case highlights its limitations in high-pressure, large-caliber vessels. VBX, despite being off-label for vascular injury, offered superior radial force and diameter control. The importance of proper apposition at both stent edges was underscored, with intraprocedural imaging (e.g., IVUS) potentially improving outcomes. Whether VBX should be used from the outset in such cases merits further discussion.

Conclusion

This case illustrates the challenges of endovascular hemostasis for iliac artery injury and emphasizes the need for optimal device selection, imaging evaluation, and institutional preparedness, including inventory and strategy for off-label use when necessary.