

Ambulation following cardiac catheterization: the earlier the better

Kardiyak kateterizasyon sonrası ambülasyon: Daha erken daha iyi

Despite recent reductions in the incidence of vascular complications following femoral artery cardiac catheterization, access site bleeding, arteriovenous fistula and pseudoaneurysm formation continue to impact patient morbidity, length of stay, and health care costs (1, 2). Procedural factors that influence the risk of vascular complications include sheath size, anticoagulation and antiplatelet strategy, and site of entry. Patient factors associated with an increased risk of vascular complications include hypertension, female sex, bleeding diathesis, peripheral arterial disease (PAD), age and obesity (2). Manual compression hemostasis followed by bed rest has been the standard of care following cardiac catheterization via femoral access. However, there are no guidelines on optimal duration of bed rest following the procedure. Studies have shown that early ambulation does not increase the risk of vascular complications and improves patient comfort (3-5). Furthermore, patients who are allowed to move in the bed during their bed rest experience less back and puncture site pain, and have no increase in vascular complications compared to controls (6). Despite this evidence, prolonged bed rest following femoral cardiac catheterization remains the standard of care in many practices.

In this well done and clinically relevant study, by Chair et al. (7) published in this issue of *The Anatolian Journal of Cardiology*, the authors evaluate the impact of early ambulation on back pain, puncture site pain, vascular complications, urinary discomfort, general well-being and patient satisfaction in a single-blinded randomized controlled trial performed at a single center in Hong Kong. All study patients underwent catheterization via femoral access and access site hemostasis was achieved by manual compression in all patients. In the experimental group, patients ambulated 4 hours post-procedure and in the control group, patients ambulated only after 12 to 24 hours bed rest. There was no difference in the vascular complications between the two groups. Early ambulation was associated with a significant reduction in back pain, decreased urinary discomfort, and increased general well-being. However, no significant benefit with respect to puncture site pain or patient satisfaction was observed. This study substantiates the results of previous stud-

ies and provides further evidence that early ambulation after cardiac catheterization improves patient comfort without compromising safety.

There are some limitations to the present study. We know from previous work that vascular complications are more prevalent in patients with obesity or peripheral arterial disease (PAD) (2). However, the average weight of patients in this study was 62.7 kilograms, and the incidence of PAD in this study population was not reported. Furthermore, this study did not include patients who underwent percutaneous coronary intervention, and these results cannot be applied to this patient group, which is at higher risk for vascular complications due to the use of anticoagulants and antiplatelet agents. Contrary to previous studies, early ambulation had no impact on overall patient satisfaction; however, this may be related to cultural differences between Chinese and other populations. Nevertheless, when taken in context with previous studies, the present findings support the premise that early ambulation after cardiac catheterization is safe and improves patient comfort.

These findings might cause us to rethink the use of vascular closure devices (VCD's), which have become widespread since their introduction in 1994. VCD's may allow for a reduction in time to hemostasis, and potentially improve patient comfort, and decrease length of stay (2). However, these devices contribute to increased health care costs, and it remains unclear whether closure devices reduce vascular complication rates (8). The current evidence suggests that early ambulation following cardiac catheterization improves patient comfort and may also reduce hospital length of stay, although this was not evaluated in the present study. Therefore, in comparison to a strategy of early ambulation following manual pressure hemostasis, the benefits of VCD's may be largely limited to the reduction in the time to hemostasis.

Cardiac catheterization via radial access represents an alternate strategy that does not require prolonged bed rest, and has also been associated with reductions in access site complications and hospital length of stay (9). Given the current trend toward radial access and the evidence supporting early ambu-

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lation following uncomplicated femoral artery catheterization, early ambulation following cardiac catheterization may be the future standard of care.

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