An investigation of pressure ulcer risk, comfort, and pain in medical imaging

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Objective
Pressure ulcers present significant trauma to patients and are expensive to manage. In medical imaging (MI), no study has been conducted to rigorously investigate interface pressure (IP) risk on MI table surfaces. IP is defined as the pressure between human body and a supporting surface. The aims of this research were to investigate whether IP risks exist on MI table surfaces and to assess pain and comfort when lying on MI table surfaces.

Method
A calibrated XSENSOR mat was used to measure IP for three jeopardy areas (head, sacrum, and heels) in healthy volunteers on an x-ray table surface with no mattress, an x-ray table surface with a thin radiolucent mattress, and a computed tomography table surface, after which they completed a pain and comfort questionnaire.

Results
The sample consisted of 26 females and 23 males aged 18–59 years (mean = 34.6; standard deviation [SD] = 10.5). Analysis of variance identified statistically significant differences in the mean IP for the jeopardy areas across the three MI table surfaces (P≤0.001). Results also indicated high mean IP value for the head (75.9 mmHg; SD = 6.9) on the x-ray table with no mattress. Seventy percent of the volunteers found lying on the x-ray table with no mattress to be very uncomfortable. Sixty-seven percent experienced most pain whilst lying on the x-ray table with no mattress and over 81% of the pain occurred at the head.

Conclusion
IP risk exists on x-ray tables with no mattress. This could increase the risk of developing pressure ulcers in patients accessing prolonged radiography/radiology procedures.