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Research in Graubünden

The right surgery for pelvic fractures

What do we need to consider in older patients?



Expertise, surgical experience and state-of-the-art technology come together in the operating theater.

Image: Kantonsspital Graubünden

The surgeons at the Kantonsspital Graubünden (KSGR) perform around 15,000 operations annually. As one of twelve trauma centers in Switzerland, the KSGR covers a wide range of treatments. Resident physician Maksym Polt also benefits from the extensive specialist knowledge available here. He is completing part of his surgical training at the Clinic for Orthopaedics and Trauma Surgery in the Department of Surgery. In addition to his practical training, Polt, who holds a doctorate in medicine, is also very interested in research.

Polt was therefore immediately willing to participate in a recent trauma surgery research project led by Christian Michelitsch (Attending Physician of Trauma Surgery). Polt explains the background of the study: "The surgical treatment of pelvic fractures is part of our clinical routine. There have been significant advances over the past decades, particularly in the field of minimally invasive techniques for stabilizing the pelvis. Pelvic fractures most commonly affect individuals in their twenties and thirties, but the second most affected group is those around 70 years old." He further explains, "Therefore, we wanted to investigate the suitability of a specific minimally invasive technique for patients over 65 years old. This technique involves inserting a titanium rod into the upper sacral canal under continuous X-ray guidance to stabilize the posterior pelvic ring."

Polt elaborates on the two goals the research team aimed to achieve with the study: "On the one hand, we wanted to determine the proportion of older patients for whom this technique is not feasible or sufficiently

safe due to anatomical conditions. To do this, we analyzed 107 computed tomography images of the pelvic of patients over 65 years old who had no history of pelvic fractures or other pathological changes. Our evaluation revealed that in 44 percent of cases, the sacral canal was too narrow for the safe implantation of the rod, with the height of the canal being particularly problematic. Secondly, we wanted to investigate whether certain anatomical features of the pelvis in older people are good indicators of a too narrow canal. Indeed, we found a feature that showed a clear statistical correlation with a too narrow canal.”

These findings contribute to improving patient care, Polt emphasizes: “If we can determine from CT images before surgery that the osseous canal is too narrow or that a certain anatomical feature indicates this, we can adapt our planning. Patients with a too narrow upper sacral canal can still undergo minimally invasive surgery by choosing a different type of rod or screw stabilization.” To make this knowledge accessible to other surgeons, the study will be presented at the annual congress of the Swiss College of Surgeons at the end of May in Davos. Additionally, a publication in a medical journal is planned.

Maksym Polt and Daniela Heinen

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The Department of Surgery at the Kantonsspital Graubünden plays a central role in south-eastern Switzerland and is actively involved in teaching and research. It covers the entire surgical spectrum with the exception of heart and transplant surgery. Around 15,000 operations are performed each year. www.ksgr.ch



Maksym Polt

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