

### **Percutaneous Nephrolithotomy in the Elderly**

PCNL is a challenging procedure in elderly patients because of age-related decline in organ function and overall patient physiology.<sup>210</sup> In addition, age is important factor in perioperative and postoperative morbidity, where elderly patients may be more vulnerable to bleeding and septic complications emerging from surgical procedures, such as PCNL.<sup>211,212</sup> Nevertheless, PCNL is considered a standard of care for managing certain urinary stones,<sup>118</sup> which may be becoming increasingly performed in the ageing population.<sup>212</sup> Studies have demonstrated that, under the care of an experienced surgeon, PCNL can be safely performed in elderly patients aged 60–70 years old.<sup>213–215</sup> More recently, a retrospective study demonstrated that PCNL is also feasible in patients aged 80 or more, although postoperative complications may occur more frequently in this group, including respiratory distress, sepsis, need for transfusion, and bleeding.<sup>216</sup>

### **References**

210. Tonner PH, Kampen J, Scholz J. Pathophysiological changes in the elderly. *Best Practice and Research: Clinical Anaesthesiology*. 2003;17(2):163-177. doi:10.1016/S1521-6896(03)00010-7
211. Akman T, Binbay M, Ugurlu M, et al. Outcomes of retrograde intrarenal surgery compared with percutaneous nephrolithotomy in elderly patients with moderate-size kidney stones: a matched-pair analysis. *Journal of Endourology*. 2012;26(6):625-629. doi:10.1089/end.2011.0526
212. Gupta R, Mahajan A. Outcomes of percutaneous nephrolithotomy in elderly versus young patients under regional anesthesia: A comparative study. *Urology Annals*. 2020;12(3):254-258. doi:10.4103/UA.UA\_69\_19
213. Şahin A, Atsü N, Erdem E, et al. Percutaneous nephrolithotomy in patients aged 60 years or older. *Journal of Endourology*. 2001;15(5):489-491. doi:10.1089/089277901750299276
214. Nakamon T, Kitirattrakarn P, Lojanapiwat B. Outcomes of percutaneous nephrolithotomy: comparison of elderly and younger patients. *International Braz J Urol*. 2013;39(5):692-701. doi:10.1590/S1677-5538.IBJU.2013.05.12
215. Anagnostou T, Thompson T, Ng CF, Moussa S, Smith G, Tolley DA. Safety and outcome of percutaneous nephrolithotomy in the elderly: Retrospective comparison to a younger patient group. *Journal of Endourology*. 2008;22(9):2139-2145. doi:10.1089/end.2007.0432
216. Abedali ZA, Large T, Heiman JM, et al. Percutaneous nephrolithotomy in the 80 years of age and older population. *Urology*. 2019;134:62-65. doi:10.1016/j.urology.2019.08.044