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Surgical management of Ureteropelvic Junction Obstruction (UPJO) in Neonates amid COVID-19 pandemic; Review of Literature and a Cohort Study in Iran

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Introduction: The current study presents a systematic review of literature on surgical management of ureteropelvic junction obstruction (UPJO) alongside an ongoing cohort study of neonates presenting with high grades of hydronephrosis due to UPJO requiring urgent treatment in a developing country amid the COVID-19 pandemic. The aim of this study is to investigate the efficacy and cost effectiveness of laparoscopic-assisted pyeloplasty.

Methods: Patients' demographics, clinical presentations and treatment outcomes are recorded. The cohort is classified into 3 groups based on type of surgical treatment offered including open, laparoscopic and laparoscopic-assisted pyeloplasty. All patients admitted with grade 3-4 hydronephrosis due to UPJO are included. Patients with UPJO as part of a complex multisystemic syndrome are excluded. Literature review was conducted from 2000/1/1 to 2020/1/1 to include all original research papers on surgical management of UPJO. The age group was limited to neonates (under 1 year-old).

Results: 32 articles were included in the review. 20 papers (62.5%) recommended open pyeloplasty, 10 papers (31.3%) recommended laparoscopic pyeloplasty and 2 papers (6.25%) recommended laparoscopic-assisted pyeloplasty. The cohort study is currently recruiting patients treated by the 3 surgical approaches.

Conclusion: The majority of studies are focusing on open pyeloplasty. However, as more surgeons are going through the learning curve of laparoscopic pyeloplasty, the trend is towards more laparoscopic management in the future. It is important to discover the advantages of laparoscopic-assisted approach as a new technique to improve the outcome and shorten the hospital stay amid the COVID-19 pandemic.