

Jeppe FREDBERG, Erling OMA, Frederik HELGSTRAND, & Lars N. JORGENSEN
 Bispebjerg Hospital, Copenhagen, Denmark

Elective Umbilical Hernia Repair – A Nationwide Registry-Based Study of Long-Term Recurrence, Mesh-Related, and Other Complications

Aim: To investigate reoperation for mesh-related complications and hernia recurrence following elective primary umbilical hernia repair (UHR).

Material and Methods: Retrospective nationwide study of all patients who underwent UHR from 2011 to 2020. All patients were followed through nationwide registries and medical files. Primary and secondary outcomes were the risk of overall reoperation, operations for recurrence and other complications. Severe complications included late mesh infection, ileus, gastro-intestinal perforation, and life-threatening bleeding.

Results: Among 3,761 patients included, 85.5% underwent mesh repair (open onlay: 44.6%, open sublay: 19.3%, or laparoscopic-intraperitoneal (Lap-IPOM): 13.6%). Follow-up was 99.9%, median 4.8 years. In total 158 (4.2%) were re-operated due to a complication during follow-up. No specific surgical mesh-

related risk factors was found to increase overall long-term risk for reoperation compared with sutured repairs (open onlay, Hazard Ratio (HR) 0.75 (0.42-1.34), $p=0.336$; open sublay, 0.72 (0.47-1.11), $p=0.131$; intraperitoneal 0.67 (0.39-1.13), $p=0.14$). Suture repair caused no severe complications. Lap-IPOM insignificantly increased the risk of severe complications compared to onlay, 3.40 (0.94-12.30), $p=0.054$. Mesh reduced operation for hernia recurrence compared to suture repair, with similar rates of non-recurrence reoperation as suture repair. Number of mesh-related complications was: onlay $n=10$ (0.6%), sublay $n=11$ (1.5%), and Lap-IPOM $n=15$ (2.9%).

Conclusion: Mesh effectively reduced operation for recurrence after UHR without significantly increasing the rate of reoperation for other complications. Open onlay or sublay mesh seems to be favorable when doing UHR. Lap-IPOM may increase the risk of severe and mesh-related complications.

Reoperation for...	Suture vs Mesh	Suture vs Onlay	Suture vs Sublay	Suture vs Lap-IPOM
... any complication (0-2 years)	HR 0.91 P = 0.690	HR 0.96 P = 0.860	HR 0.90 P = 0.730	HR 0.65 P = 0.260
... any complication (> 2 years)	HR 0.43 P = 0.015	HR 0.38 P = 0.03	HR 0.27 P = 0.039	HR 1.21 P = 0.700
... recurrence	HR 0.37 P < 0.001	HR 0.27 P < 0.001	HR 0.45 P = 0.047	HR 0.61 P = 0.25
... non-recurrence complication	HR 1.35 P = 0.31	HR 1.50 P = 0.180	HR 1.10 P = 0.78	HR 1.06 P = 0.900

