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Impact of Ductal Plate Malformation on Clearance of Jaundice in Biliary Atresia: A Retrospective Cohort Analysis

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Objective

To test whether ductal plate malformation (DPM) predicts clearance of jaundice (COJ) after Kasai portoenterostomy (KPE) in biliary atresia (BA).

We also assessed associations of DPM with native liver survival and histologic fibrosis grade.

Methods

Design: Single-center retrospective cohort (2007–2023).

Population: Infants with BA undergoing KPE.

Exposure: DPM status on liver biopsy, read by an expert pathologist blinded to outcomes.

Primary outcome: COJ = total bilirubin <2 mg/dL within 6 months post-KPE.

Secondary outcome: Native liver survival (NLS).

Statistics: Chi-square/Fisher's exact; Kaplan–Meier with log-rank.

Results

N=56; DPM(+) 21 (37.5%), DPM(–) 35.

DPM(+) by fibrosis grade: 1 ° = (1/10), 2 ° = (4/19), 3 ° = (16/27); p=0.004.

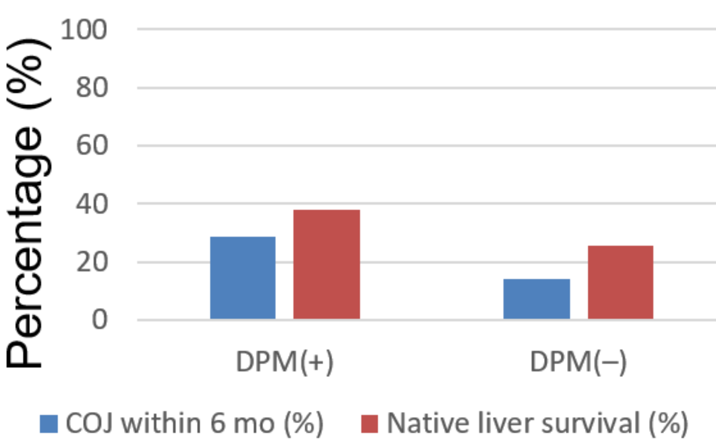
COJ: DPM(+) (6/21) vs DPM(-) (5/35); p=0.298.

NLS: DPM(+) (5/21) vs DPM(-) (12/35); p=0.55.

DPM	Fibrosis 1 (n=10)	Fibrosis 2 (n=19)	Fibrosis 3 (n=27)	p-value
Absent (0)	9 (90.0%)	15 (78.9%)	11 (40.7%)	**0.004**
Present (1)	1 (10.0%)	4 (21.1%)	16 (59.3%)	

Outcome	DPM(+) n=21	DPM(–) n=35	p-value
Clearance of jaundice ≤6 mo	6/21 (28.5%)	5/35 (14.3%)	**0.298**
Native liver survival	8/21 (38.1%)	9/35 (25.7%)	**0.550**

Figure 1 — Outcomes by DPM status



Conclusion

In this cohort, DPM did not independently predict COJ after KPE.

DPM alone should not guide counseling or perioperative decisions; consider models with clinical covariates.