

Percutaneous Liver Biopsy Adverse Events in Stable Fontan Patients

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Background:

In patients who have undergone a Fontan operation, altered cardiac circulation can lead to several organ pathologies, including Fontan-associated liver disease. Transjugular liver biopsies are the standard for assessing liver disease in these patients, however data for a percutaneous approach in these patients is limited. Percutaneous liver biopsies are the preferred method in the general population. The objective of this study was to compare the rate of adverse events for percutaneous liver biopsies in Fontan patients to the general pediatric population.

Methods:

A retrospective chart review was conducted on percutaneous liver biopsy patients over a five-year period. For each patient, a 90-day period post-biopsy was investigated to look for any indications of adverse events (pain, hemorrhage) and related work-up (imaging, hospital admission), scoring the severity of these events based on SIR adverse event classification. Patients were stratified based on if they underwent a cardiac catheterization procedure immediately prior to biopsy or not.

Results:

A total of 412 biopsies were reviewed, 367 without cardiac catheterization and 45 with catheterization. Across the entire population, 38 adverse events were found, giving an overall adverse event rate of 9.2%. Comparing populations, non-catheterized patients were found to have an adverse event rate of 9.0%, with a minor rate of 7.2% and a major rate of 1.8%. The catheterized group had an adverse event rate of 11.1%, with a minor rate of 8.8% and a major rate of 2.3%. There were no lethal events. These rates align with reported literature.

Conclusion and Potential Impact:

There was no significant difference in adverse event rates between Fontan patients and the general population after a percutaneous liver biopsy. This information can guide clinical decisions, as these biopsies are cheaper, less invasive, and do not expose patients to ionizing radiation.