Data were analysed using Jamovi statistical software. A total of 30 participants were randomised equally into two groups (15 participants in each group): Group A, receiving a low-pressure fixed-pressure ventriculoperitoneal (VP) shunt, and Group B, receiving a medium-pressure fixed-pressure VP shunt.

Baseline demographic characteristics were summarised descriptively. Continuous variables were expressed as mean and standard deviation where appropriate, and categorical variables were expressed as frequencies and percentages.

The primary outcome was the clinical effect of the type of fixed-pressure VP shunt on anterior fontanelle (AF) status during the early postoperative period. AF status was assessed preoperatively and daily from postoperative day (POD) 1 through POD 5. AF was classified as bulged, flat or depressed and assigned weighted scores of +1, 0 and −1, respectively, with a lower score indicating greater improvement in AF status.

As the AF weighted-score data were not normally distributed, non-parametric statistical methods were used. The Wilcoxon–Mann–Whitney test was used to compare AF weighted scores between the two shunt groups at each time point. The Friedman test was used to assess changes in AF weighted score over time within each treatment group. The pattern and timing of improvement in AF status across the postoperative period were also described.

The secondary outcome was the sonological effect of shunt type on ventricular size, assessed using the ventriculo-haemispheric ratio (VHR). VHR was calculated as the ratio of the maximum width of the frontal horns of the lateral ventricles to the maximum internal diameter of the skull, measured by cranial ultrasonography. VHR was assessed preoperatively and on POD 5. Within each treatment group, the preoperative and POD-5 VHR values were compared using a paired t-test.

All statistical tests were two-sided, and a p-value of <0.05 was considered statistically significant. No cases were lost to follow-up during the five-day postoperative assessment period and no complications were reported during this period.