Queen Elizabeth Central Hospital

Hospital in Blantyre, Malawi

Over the past two decades, the hydrocephalus treatment has witnessed the addition of endoscopic third ventriculostomy with or without choroid plexus cauterization (ETV ± CPC) to the traditional methods including ventriculoperitoneal shunt placement.

Chimaliro et al. conducted a study to assess mortality and complications with surgical implications associated with the two procedures in children with hydrocephalus.

They reviewed the operating theater registry to identify children below 17 years old who underwent hydrocephalus surgery for the first time in 2016. The patients were followed for up to 1 year from the date of the initial operation. Their vital status was confirmed by follow-up visits by a community nurse. Descriptive analyses were used to describe the characteristics of the patients and evaluate the study outcomes (i.e., mortality and complications).

One hundred fifty-three patients were eligible for the study; 56% were males and 73.2% had primary ETV ± CPC. Complete 1-year follow-up data was available for 79 patients, and 73.4% of these had ETV ± CPC. One-year success (event-free) rates for ETV and VPSI were similar at 67.4% and 66.7%, respectively. ETVs in infants under 6 months performed poorly; failing in half the infants, who were subsequently converted to VPS. Shunt sepsis was very high, 21.4% (95% CI 10.3-36.8). The majority of surgical complications (81.8%) occurred within 3 months of surgery.

ETV ± CPC and ventriculoperitoneal shunt placement carry a similar frequency of mortality and complications, and therefore, both should be considered as a treatment option for patients with hydrocephalus. As VP shunt is still used for managing most of the patients, there is still a need to prioritize measures to reduce shunt infections [1)]

1: Botelho F, Gripp K, Yanchar N, Naus A, Poenaru D, Baird R, Reis E, Farias L, Silva AG, Viana F, Neto JAP, Silva S, Ribeiro K, Gatto L, Faleiro MD, Fernandez MG, Salgado LS, Sampaio NZ, Faleiro MD, Mendes AL, Ferreira RV, Marcião L, Canto G, Borges J, Araújo V, Andrade G, Braga J, Bentes L, Pinto L, Ndasi HT, Amlani LM, Aminake G, Penda X, Tima S, Lechtig A, Agarwal-Harding KJ, Whyte M, Fowler-Woods M, Fowler-Woods A, Shingoose G, Hatala A, Daeninck F, Vergis A, Clouston K, Hardy K, Djadje L, Djoutsop OM, Djabo AT, Kanmounye US, Youmbi VN, Kakobo P, Djoutsop OM, Djabo AT, Kanmounye US, Tafesse S, Tamene B, Chimdesa Z, Alemayehu E, Abera B, Yifru D, Belachew FK, Tirsit A, Deyassa N, Moen BE, Sundstrøm T, Lund-Johansen M, Abebe M, Khan R, Mekasha A, Soklaridis S, Haji F, Asingei J, O'Flynn EP, O'Donovan DT, Masuka SC, Mashava D, Akello FV, Ulisubisya MM, Franco H, Njai A, Simister S, Joseph M, Woolley P, James D, Evans FM, Rai E, Roy N, Bansal V, Kamble J, Aroke A, David S, Veetil D, Soni KD, Wärnberg MG, Zadey S, Vissoci JRN, Iyer H, Zadey S, Shetty R, Zadey S, Jindal A, Iyer H, Ouma G, Shah SSNH, Hinchman C, Rayel IM, Dworkin M, Agarwal-Harding KJ, Mlinde E, Amlani LM, May CJ, Banza LN, Chokotho L, Agarwal-Harding KJ, Dworkin M, Mbomuwa F, Chidothi P, Martin C Jr, Harrison WJ, Agarwal-Harding KJ, Chokotho L, Paek S, Amlani L, Mbomuwa F, Chidothi P, Martin C Jr, Harrison WJ, Agarwal-Harding KJ, Chokotho L, Adégné T, Abdoulmouinou P, Amadou T, Youssouf T, Madiassa K, Younoussa DM, Moussa S, Amadou B, Hawa T, Laurent A, Jesuyajolu DA, Okeke CA, Obuh O, Jesuyajolu DA, Ehizibue PE, Ikemefula NE, Ekennia-Ebeh JO, Ibraham AA, Ikegwuonu OE, Diehl TM,

Bunogerane GJ, Neal D, Ndibanje AJ, Petroze RT, Ntaganda E, Milligan L, Cairncross L, Malherbe F, Roodt L, Kyengera DK, O'Hara NN, Stockton D, Bedada A, Hsiao M, Chilisa U, Yarranton B, Chinyepi N, Azzie G, Moon J, Rehany Z, Bakhshi M, Bergeron A, Boulanger N, Watt L, Wong EG, Pawlak N, Bierema C, Ameh E, Bekele A, Jimenez MF, Lakhoo K, Roy N, Sacato H, Tefera G, Ozgediz D, Jayaraman S, Peric I, Youngson G, Ameh E, Borgstein E, O'Flynn E; CROCODILE study group, Simoes J, Kingsley PA, Sasson L, Dekel H, Sternfeld AR, Assa S, Sarid RS, Mnong'one NJ, Sharau GG, Mongella SM, Caryl WG, Goldman B, Bola R, Ngonzi J, Ujoh F, Kihumuro RB, Lett R, Torquato A, Tavares C, Lech G, Džunic A, Ujoh F, Gusa V, Apeaii R, Noor R, Bola R, Guyan IO, Christilaw J, Hodgins S, Lett R, Binda C, Heo K, Cheng S, Foggin H, Hu G, Lam S, Feng L, Labinaz A, Adams J, Livergant R, Williams S, Vasanthakumaran T, Lounes Y, Mata J, Hache P, Schamberg-Bahadori C, Monytuil A, Mayom E, Joharifard S, Joos É, Paterson A, Maswime S, Hardy A, Pearse RM, Biccard BM; African Surgical Outcomes (ASOS) group and International Surgical Outcomes (ISOS) group, Salehi M, Zivkovic I, Jatana S, Joharifard S, Joos É, Flores MJ, Brown KE, Roberts HJ, Donnelley CA, von Kaeppler EP, Eliezer E, Haonga B, Morshed S, Shearer DW. Decolonizing Global Surgery: Bethune Round Table, 2022 Conference on Global Surgery (virtual), June 16-18, 2022. Can J Surg. 2022 Aug 12;65(4 Suppl 1):S1-S18. doi: 10.1503/cjs.007622. PMID: 35961679; PMCID: PMC9388215.

2: Jumbam DT, Kanmounye US, Citron I, Kamalo P. Evidence-Driven Policies for Sustainably Scaling Up Surgical Task-Sharing in Malawi Comment on “Improving Access to Surgery Through Surgical Team Mentoring - Policy Lessons From Group Model Building With Local Stakeholders in Malawi”. Int J Health Policy Manag. 2022 Apr 13. doi: 10.34172/ijhpm.2022.6979. Epub ahead of print. PMID: 35418010.

3: Rush J, Paľa A, Kapapa T, Wirtz CR, Mayer B, Micah-Bonongwe A, Gladstone M, Kamalo P. Assessing neurodevelopmental outcome in children with hydrocephalus in Malawi. A pilot study. Clin Neurol Neurosurg. 2022 Jan;212:107091. doi: 10.1016/j.clineuro.2021.107091. Epub 2021 Dec 13. PMID: 34922292.

4: Aukrust CG, Kamalo PD, Prince RJ, Sundby J, Mula C, Manda-Taylor L. Improving competencies and skills across clinical contexts of care: a qualitative study on Malawian nurses' experiences in an institutional health and training programme. Nurs Open. 2021 Nov;8(6):3170-3180. doi: 10.1002/nop2.1030. Epub 2021 Aug 6. PMID: 34355870; PMCID: PMC8510767.

5: Khalek ER, Afungchwi GM, Beltagy ME, Mariam N, Zaki H, Israels T, Molyneux E, Howard SC, Patte C, Schoeman J, Ladas E, Zaghloul MS, ElDeen YS, Ahmed S, Kamal S, Bouffet E, Pritchard-Jones K, Hessissen L. Highlights from the 13th African Continental Meeting of the International Society of Paediatric Oncology (SIOP), 6-9 March 2019, Cairo, Egypt. Ecancermedicalscience. 2019 May 28;13:932. doi: 10.3332/ecancer.2019.932. PMID: 31281429; PMCID: PMC6592710.

6: Kamtchum-Tatuene J, Kamwezi R, Nyalubwe T, Banda JP, Mwangalika G, Matandika I, Hemmila U, Tisell M, Koponen S, Benjamin LA, Kamalo P. A 42-year-old woman with subacute reversible dementia: A cautionary tale. Malawi Med J. 2017 Sep;29(3):265-267. doi: 10.4314/mmj.v29i3.7. PMID: 29872518; PMCID: PMC5812000.

7: Gadama Y. Profile Interview: Dr. Patrick Dongosolo Kamalo - Consultant Neurosurgeon at Queen Elizabeth Central Hospital. Malawi Med J. 2018 Mar;30(1):52-53. doi: 10.4314/mmj.v30i1.12. PMID: 29868162; PMCID: PMC5974389.

8: Silva GS, Richards GA, Baker T, Hidalgo J, Jiménez JIS, Amin P; Council of the World Federation of Societies of Intensive and Critical Care Medicine. Zika virus: Report from the task force on tropical diseases by the world Federation of Societies of intensive and critical care medicine. J Crit Care. 2018 Aug;46:106-109. doi: 10.1016/j.jcrc.2018.03.030. Epub 2018 Apr 5. PMID: 29779827.

9: Silva GS, Richards GA, Baker T, Amin PR; Council of the World Federation of Societies of Intensive and Critical Care Medicine. Encephalitis and myelitis in tropical countries: Report from the Task Force on Tropical Diseases by the World Federation of Societies of Intensive and Critical Care Medicine. J Crit Care. 2017 Dec;42:355-359. doi: 10.1016/j.jcrc.2017.11.001. Epub 2017 Nov 3. PMID: 29157660.

10: Donald KA, Kakooza AM, Wammanda RD, Mallewa M, Samia P, Babakir H, Bearden D, Majnemer A, Fehlings D, Shevell M, Chugani H, Wilmshurst JM. Pediatric Cerebral Palsy in Africa: Where Are We? J Child Neurol. 2015 Jul;30(8):963-71. doi: 10.1177/0883073814549245. Epub 2014 Oct 7. PMID: 25296926.

11: Adeloye A. Hydranencephaly in Malawian children. East Afr Med J. 2000 Jun;77(6):316-8. doi: 10.4314/eamj.v77i6.46641. PMID: 12858931.

1)

Chimaliro S, Hara C, Kamalo P. Mortality and complications 1 year after treatment of hydrocephalus with endoscopic third ventriculostomy and ventriculoperitoneal shunt in children at Queen Elizabeth Central Hospital, Malawi. Acta Neurochir (Wien). 2022 Oct 25. doi: 10.1007/s00701-022-05392-7. Epub ahead of print. PMID: 36282428.