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Successfully treated *Candida* infection of ventriculo-peritoneal shunt in an extremely low birth weight infant

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Infection is a common complication of ventriculo-peritoneal (VP) shunt placement. *Candida* is a rarely implicated. Most authors consider device removal necessary to clear infection. Jans reported high caspofungin levels in cerebrospinal fluid (CSF) and successful treatment of a neonatal VP shunt-associated *Candida* meningitis adding caspofungin to standard antifungal treatment. A preterm female (GA24 weeks, BW 708 gr) developed, on day 14, late onset GBS sepsis with ultrasonographic evidence of ventriculitis. Lumbar puncture was not performed because of clinical instability. She received a 16 days course of antibiotics plus fluconazole prophylaxis. Despite clinical improvement, progressive hydrocephalus occurred. On day 46, antibiotic-impregnated VP shunt with Ommaya was inserted, with 3 days prophylactic linezolid and cefotaxime. CSF taken during surgical procedure (see table 1) grew *Candida albicans* susceptible to fluconazole, voriconazol, amphotericin B; qualitative real-time PCR for GBS was positive. Ampicillin (300 mg/kg/day) and fluconazole (6 mg/kg/day) were started. Fifteen days later, CSF showed moderate response to treatment but culture was still positive for *Candida albicans*. After 3 weeks, the baby had poor weight gain, unchanged ventricular size despite VP shunt, worsening of pleiocytosis and raised CSF proteins, with negative culture. Intravenous caspofungin (25 mg/m²/day) was added and ampicillin stopped (we assumed PCR detection of GBS not indicative of active infection). After a 9 days on caspofungin, there were clinical improvement, reduction of ventricles size, sterile CSF, reduced pleiocytosis and CSF proteins. Fluconazole and caspofungin were discontinued. The baby recovered, without the need for shunt replacement, and was discharged home on day 90. VP shunt was replaced only 18 months later because of malfunctioning.

	Day 46	Day 61	Day 70	Day 79
CSF cells (cells/microliter)	1660	520	650	140
CSF protein(g/liter)	6.27	7.53	8.04	7.38
CSF glucose (g/liter)	1.6	1.1	1.1	1.1
CSF Culture	<i>Candida albicans</i>	<i>Candida albicans</i>	Negative	Negative
qualitative real-time PCR for GBS	Positive	Positive	-	-

Table 1.

Caspofungin, probably due to its specific action on fungal biofilm, can achieve resolution of VP shunt-associated *Candida albicans* infections, avoiding shunt and reservoir substitution.

Bibliography

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Biography

Vittoria Rizzo works at PICU-NICU in "Maurizio Bufalini" Hospital Cesena-Italy. She has a special interest in Neonatal Infections. She has published more than 20 papers in reputed journals, of which 8 in international Journals.

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