Levonorgestrel

Levonorgestrel-releasing intrauterine devices (LIUDs) are thought to release this progestin locally in the uterus to limit side effects.

Maragkos et al. presented a case of treatment-refractory hydrocephalus and pseudomeningocele (PMC), both of which fully resolved after LIUD removal. A 35-year-old woman with an implanted LIUD developed symptomatic PMC and hydrocephalus after suboccipital craniectomy for Chiari malformation type I. Over the next 8 months, she underwent ventriculoperitoneal shunt placement and two attempts at needle decompression of the fluid collection, which did not relieve her symptoms or the PMC, except for a few days at a time. Subsequently, she had her LIUD removed. Three weeks after removal of the LIUD, her symptoms, as well as the fluid collection, resolved completely without any further intervention. Thus, the increased intracranial pressure and associated persistence of the PMC may be partially attributed to the LIUD. This case indicates that a persistent problem (PMC and intracranial hypertension) that may be associated with the LIUD rapidly resolves after its removal. The implication of LIUDs as the cause of intracranial hypertension is still a matter of controversy. Further studies are needed to evaluate any potential causal relationship between LIUDs and intracranial hypertension, and physicians are advised to consider this scenario in their differential diagnosis [1].

Piper et al. reported a case of clinical progression of a sphenoid wing meningioma after the placement of Norplant, a subcutaneous contraceptive implant containing levonorgestrel, a progesterone agonist. Although not proof of causation, this observation lends further credence to the importance of progesterone receptors in the growth and possible treatment of meningiomas.

Reported is a female case study of a 40-year-old patient who 4 weeks previous had received a Norplant subcutaneous contraceptive implant. The patient presented at 4 weeks postimplant with blurred vision in her left eye. She further reported never having used hormonal contraceptives. Her vision continued to deteriorate over the next several months to 20/60 visual acuity. After examination by neuro-ophthalmologists at the University of Iowa Hospital and Clinics system, the following abnormalities in the left eye were reported: impaired color vision; a severely reduced critical flicker fusion rating (13 Hz); an abnormality in the temporal field (using Humphrey 30-2 program); and a 3 times greater light sensitivity. The fundus and the optic nerve heads appeared normal. Magnetic resonance imaging revealed a homogeneous mass along the medial sphenoid wing which continued into the left cavernous sinus and sella. Part of this mass crowded the left optic nerve opening (chiasm). During the subsequent 6 weeks, the patient's visual acuity continued to deteriorate to 20/100 despite removal of the Norplant implant. The tumor mass was surgically removed and pathologically examined. It was a meningothelial neoplasm and tested positive for progesterone receptors (125 fmol/mg of protein). It tested negative for estrogen receptors. Authors provide a discussion on the history of hormonal influence/agonist effects on meningiomas. The authors conclude that there is evidence which supports the theory that meningiomas may be subject to hormonal influence and may be stimulated by hormones to grow. They further conclude that their observations do not prove a cause-and-effect relationship and that further research is needed [2].

References

1)
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2)
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