Letters to the Editor

NEUROSURGICAL FORUM

Asymptomatic lipomas of the conus medullaris


Lipoma of the conus medullaris is one of the most commonly described forms of occult spinal dysraphism and represents a considerable challenge in clinical decision making.6,9 There is an ongoing unresolved debate in the neurosurgical community about its optimal management: Should children diagnosed with this condition be offered prophylactic surgery? We have recently read with great interest the publication by Talamonti and colleagues.7 This potentially meaningful clinical study, apparently a prospective cohort study (although not explicitly stated), compares the outcome of surgical and conservative management of patients with an asymptomatic conus lipoma.

The authors should be commended for their thorough investigative work, methodological stringency, and elaborative statistical analysis. The children in the surgical and conservative groups had similar baseline demographic data, except for the remarkably younger age in the surgical group (mean 1.9 years vs 3.1 years in the conservative group). This disparity may reflect some selection bias of which the authors were aware and accounted for in the statistical analysis. The clinical characteristics and MRI types of the conus lipoma (according to Chapman’s classification)1 were also fairly comparable between the 2 groups. Still, some points of the paper are worthy of further consideration.

There is no clear indication as to why asymptomatic patients were brought to medical attention, leaving the reader to assume that it was because of suspicious cutaneous stigmata. The results are very impressive in the surgical group, with a 90% favorable outcome (except for the 3 patients with repeated urinary tract infections) and a cumulative 3.7% operative morbidity, consisting predominately of sphincter and motor deficits. This risk profile is remarkably lower than that reported in most of the commonly cited clinical papers, including the oft-cited large experience of the Paris group2–5 that favored conservative management. The surgical morbidity rate is only comparable to the work of Pang and colleagues,3,4 who structurally described a detailed surgical approach for maximum safe resection of the lipoma with extensive intraoperative monitoring. Although we expected that a similar detailed description of the operative technique would be included in the paper by Talamonti et al. in order to provide some insight on the factors that favored this outstanding outcome, the authors stated that radical resection was never attempted and did not report the operative data on the extent of lipoma resection, whether complete untethering was identified either directly or with surrogates (e.g., getting the edge of the lipoma, restoration of CSF flow inside the thecal sac, or visualization of freely flowing conus). With that being said, the group relied on postoperative MRI to provide data (cord/sac ratio and extent of resection) as surrogate indicators of adequate untethering. These measures are indeed very useful, but they can only serve for postoperative follow-up purposes and do not help with intraoperative guidance. Moreover, the follow-up was devoid of explicitly defined structured end points (although a protocol for follow-up was referred to) for the recognition of secondary tethered cord syndrome. The study presents a patient cohort with clinical and radiological characteristics that are strikingly similar to those of the cohort of the UK group8 who offered a natural history perspective and a management algorithm for this condition. But the article by Talamonti et al. supersedes the British article with its prospective nature and its comparative data between the surgical and conservative groups, and in some of its operative technical details (e.g., filling the thecal sac with hyaluronic gel) and postoperative imaging data (favorable cord sac ratio < 0.5). The authors have contributed significantly to the growing body of literature and reinforced certain notions. Among these is the complex nature and grave prognosis of the transitional type of conus lipomas as well as the expected age of deterioration (around 7–8 years). Of special note in this respect is that the study failed to show a statistically significant association between the risk of deterioration and type of lipoma, despite the fact that 5 of the 7 cases in which deterioration was observed in the conservative group and all of the complicated cases in the surgical group involved transitional lesions. This has many explanations; the simplest is that the small number of
of cases underpowers the study’s ability to detect a difference. Given these results, the authors’ conclusion and subsequent change of management protocol to offer surgery to all patients with nontransitional lipomas remains without explanation.

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DISCLOSURE
Dr. Souweidane reports a consultant relationship with Aesculap.

References

Response
We sincerely thank Drs. Latif and Souweidane for their kind words about our article. As they correctly outlined, the only remarkable difference between the surgical and the conservative groups was the mean age (1.9 vs 3.1 years). Our policy was to offer the choice between surgical and conservative management as soon as we encountered these patients. Accordingly, there was no voluntary bias. The older age in the conservative group was simply related to delayed observation of these patients. The situation of a newborn with a recently diagnosed lipoma is likely to be quite different from that of an older child with an asymptomatic lipoma. In the case of the newborn, the parents were usually more worried about the malformation than about the treatment. Most likely, they had not yet accepted the idea of a potentially dangerous malformation. Therefore, despite reassurance and information, they were probably more inclined to choose surgery, hoping this could be immediately and definitely decisive. Conversely, when we first met with parents of older, asymptomatic children, the parents had already personally verified that their child had remained normal despite the malformation. Furthermore, often they had previously met with other neurosurgeons with different opinions about treatment. Accordingly, they were probably more worried about the surgical risks than about the natural history, which had not seemed so negative up to that point.

Dr. Latif and Dr. Souweidane wondered about the cutaneous stigmata of our patients. In our experience, it is quite difficult to find a truly occult lipoma in a completely asymptomatic patient. This may occur only incidentally. In fact, in this series, there was no truly occult malformation, and all patients had cutaneous stigmata, which resulted in their being brought to medical attention when they were still asymptomatic: most patients presented true subcutaneous masses, others had gluteus asymmetry, and so on. However, all of these patients were asymptomatic when we met them for the first time.

Drs. Latif and Souweidane commented that our rate of good surgical results (90%) is comparable only with the rate of favorable outcome reported by Pang et al.10,11 We do not agree with this statement. As they correctly emphasized, worse results have been reported by the Parisian authors5,12,15,16 and also by others,1 but the incidence of spinal cord retethering following lipoma resection has been repeatedly found to be between 10% and 20%.2,3,4,13 Apart from the cited papers by Pang et al.,10,11 there are also papers by other authors reporting results quite comparable with ours. For instance, Wu et al.14 demonstrated that 84% of their 43 patients maintained stable urodynamic and neurological functions after surgery. The same success rate was obtained by Morimoto et al.15 in 56 patients with a mean follow-up of 7.9 years. Kaney et al.4 reported that 92.1% of their 38 asymptomatic patients had no neurological deficits or bladder dysfunction at long-term postoperative follow-up (range 1–21 years, mean 6.2 years). Finally, in the wide experience of McLone and colleagues,6,7 71 asymptomatic children with lipomas of the medullary conus underwent prophylactic surgery; 5 of these patients experienced inexcusable deterioration, while 66 (93%) remained asymptomatic throughout the follow-up period (mean 6.2 years).

We did not detail our surgical techniques only because we did not use a particular personal technique. In the article, we clearly declared that we adopted the classical techniques, namely those carefully described by masters such as McLone, Oakes, and especially Pang.7,9,10 However, we introduced some small personal modifications (indicated in the text): for instance, the use of hyaluronic gel or lipoma removal following the instructions of Pang et al.10 but without attempting a truly radical removal. Pang and colleagues are so skilled that they were able to completely