

LETTER TO THE EDITOR

Osteosarcoma and alternative medicine in children

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Dear Editor,

The use of complementary and alternative medicine (CAM) is widespread throughout the world and encompasses a wide range of different approaches. Research shows that in developed countries a significant number of people use various methods of CAM in their treatment [1]. Scientists believe that the effect of most alternative therapies can be attributed to the placebo effect. The most commonly used methods are homeopathy, acupuncture, chiropractic, bioenergy therapy, dietotherapy, and the consumption of medicinal herbs, vitamins, minerals, etc., and each of these methods has a whole range of variations. A meta-analysis in several countries has shown that more than half of all cancer patients use CAM methods [2]. Most CAM products are over-the-counter and belong to the group of dietary supplements. An increasing number of cancer patients are taking CAM products without the knowledge of their doctors, believing that such treatment will help them recover faster or even lead to a cure [3, 4]. It is important to note that when it comes to treating children, the percentage of parents who opt for CAM methods is similar [5]. Parents often do not even consult a paediatrician, but do everything on their own initiative, consulting with unverified sources of information [6]. The ethical question is: Who is the appropriate decision-maker in this case, the parent or the doctor? Although conventional medicine provides far more evidence, on the basis of which the doctor makes his/her decision, it is the parent who must also consider all reasonable options and decide what is in the best interests of the child. We are aware that legislation on the rights of patients and their parents differs from state to state, so there is no uniform pattern of action. The doctor and the parent, based on common sense and the latest guidelines, must make the best decision for the child [7, 8]. Osteosar-

coma (OS), a common primary bone malignancy in children and adolescents, occurs primarily in the metaphysis of long bones and is characterized by early lung metastases, high mortality, and poor prognosis [9]. For many years, amputation has been the mainstay of OS, with a 5-year survival rate of approximately 20%. The inclusion of chemotherapy in treatment regimens has increased cure rates from 20% to current levels of 65–75% [10, 11]. It is important to emphasize that if OS is identified at an early stage, surgical methods in the removal of pathological tissue have a success rate of as much as 85–90%. Even if the tumour has affected the growth plate, there are expandable endoprostheses that have shown excellent results [12]. Currently, a widely accepted strategy for OS is surgery combined with neoadjuvant chemotherapy, which has a great ability to reduce tumours and eliminate small lesions to ensure complete surgical resection and reduce tumour recurrence and metastasis [13]. Despite advances in chemotherapy and surgical techniques over the past decade, there has been stagnation in improving patient survival outcomes, particularly in patients with metastatic OS. Advances in the areas of immunotherapy and targeted chemotherapy offer promising results.

In the last 20 years, we have witnessed 2 children with OS whose parents refused surgical treatment and chemotherapy. The first case is an 11-year-old boy who had pain and swelling around his left knee and distal femur for 2 weeks. The pain intensified at night and after a long walk. After an X-ray and suspicion of a tumour process, the parent denied further diagnostic procedures and took his son out of the hospital on his own initiative. In another state, parents opted for alternative medicine. For this purpose, they used herbal nutrition, massages, aromatherapy, and acupuncture. After 2 months of alternative treatment, the local status of the knee deteriorated

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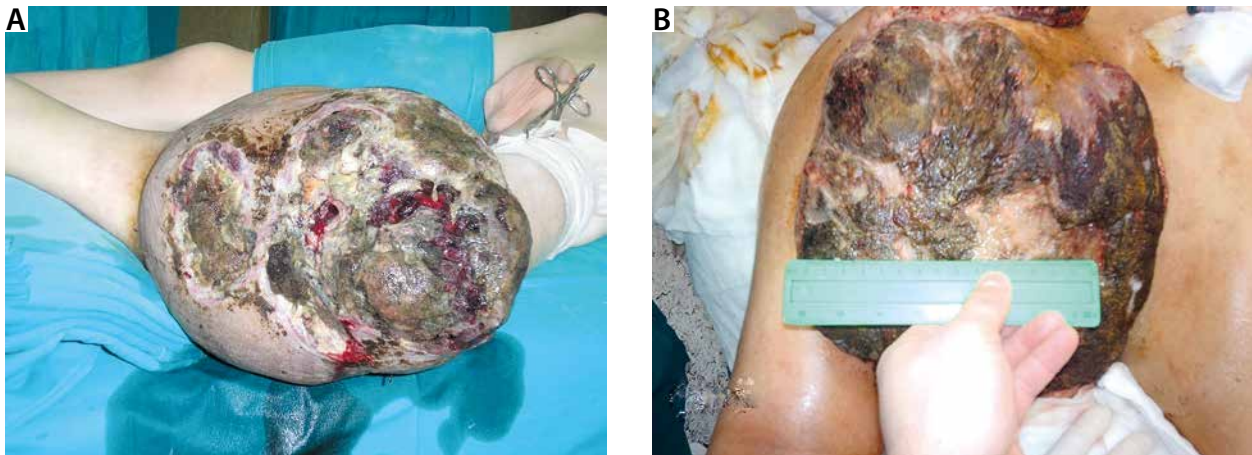


FIGURE 1. A) Osteosarcoma of the knee in an 11-year-old boy. B) Osteosarcoma of the shoulder in a 17-year-old boy

significantly. Upon re-arrival at our hospital, extensive diagnostic processing was performed (computed tomography, magnetic resonance imaging, angiography, scintigraphy, biopsy), which verified OS without metastases. Chemotherapy was started immediately according to the protocol, and because the tumour had spread to nerves, blood vessels, and surrounding soft tissues, the limb rescue procedure was no longer possible (Figure 1 A). Amputation was the only choice of surgical treatment. One year after the amputation and chemotherapy, the boy developed metastases and died despite the chemotherapy. Another case is a 17-year-old boy with pain and swelling in his right shoulder joint. An X-ray showed bone destruction. After further diagnostic processing, a diagnosis of OS was made. Thinking that chemotherapy was a bad thing, the parents also refused further treatment at our institution and opted for alternative treatment in another state. Alternative treatments included acupuncture, massage, and macrobiotic nutrition. Every day the local status of the shoulder deteriorated. After 3 months of alternative treatment, local status deteriorated (Figure 1 B). The cancer spread to nerves, blood vessels, and surrounding soft tissues and an amputation of the arm at the shoulder was performed. Chemotherapy according to the protocol was started immediately. The boy's local and general condition deteriorated every day, and due to lung metastases, the boy eventually died.

We want to emphasize that alternative therapy in children with OS does not have a good prognosis. Alternative treatment of OS without prompt chemotherapy and, if necessary, surgical treatment is not the method of choice. Despite advances in conventional medicine, we still meet parents in our daily practice who need to be convinced that alternative medicine is not a substitute for conventional medicine. In the best interests of the child, if the parents are principled in their decision not to trust conventional medicine, any case of refusal of conventional treatment of a child with cancer, with a real chance of cure, should be reported by the doctor to the appropriate judicial authorities, such as the family court.

DISCLOSURE

The authors declare no conflict of interest.

REFERENCES

- Ernst E. Prevalence of use of complementary/alternative medicine: a systematic review. *Bull World Health Organ* 2000; 78: 252-257.
- Horneber M, Bueschel G, Dennert G, Less D, Ritter E, Zwahlen M. How many cancer patients use complementary and alternative medicine: a systematic review and metaanalysis. *Integr Cancer Ther* 2012; 11: 187-203.
- Elder NC, Gillcrist A, Minz R. Use of alternative health care by family practice patients. *Arch Fam Med* 1997; 6: 181-184.
- Vincent C, Furnham A. Why do patients turn to complementary medicine? An empirical study. *Br J Clin Psychol* 1996; 35: 37-48.
- Lorenc A, Ilan-Clarke Y, Robinson N, Blair M. How parents choose to use CAM: a systematic review of theoretical models. *BMC Complement Altern Med* 2009; 9: 9.
- Kemper KJ. Complementary and alternative medicine for children: does it work?. *West J Med* 2001; 174: 272-276.
- Gilmour J, Harrison C, Asadi L, Cohen MH, Vohra S. Informed consent: advising patients and parents about complementary and alternative medicine therapies. *Pediatrics* 2011; 128: S187-S192.
- Gilmour J, Harrison C, Cohen MH, Vohra S. Pediatric use of complementary and alternative medicine: legal, ethical, and clinical issues in decision-making. *Pediatrics* 2011; 128: S149-S154.
- Anderson ME. Update on Survival in osteosarcoma. *Orthop Clin North Am* 2016; 47: 283-292.
- Jawad MU, Cheung MC, Clarke J, Koniaris LG, Scully SP. Osteosarcoma: improvement in survival limited to high-grade patients only. *J Cancer Res Clin Oncol* 2011; 137: 597-607.
- Jiang F, Shi Y, Li GJ, Zhou F. A meta-analysis of limb-salvage versus amputation in the treatment of patients with Enneking#U pathologic fracture osteosarcoma. *Indian J Cancer* 2015; 51: e21-e24.
- Misaghi A, Goldin A, Awad M, Kulidjian AA. Osteosarcoma: a comprehensive review. *SICOT J* 2018; 4: 12.
- Ando K, Heymann MF, Stresing V, Mori K, R dini F, Heymann D. Current therapeutic strategies and novel approaches in osteosarcoma. *Cancers (Basel)* 2013; 5: 591-616.