

Proton beam radiotherapy: report of the first patient treated at the Centro Nazionale di Adroterapia Oncologica (CNAO)

Roberto Orecchia^{1,2}, Anurita Srivastava¹, Maria Rosaria Fiore¹, Viviana Vitolo¹, Piero Fossati^{1,2}, Barbara Vischioni¹, Alberto Iannalfi¹, Jeffrey Tuan¹, Mario Ciocca¹, Silvia Molinelli¹, Alfredo Mirandola¹, Gloria Vilches¹, Andrea Mairani¹, Barbara Tagaste¹, Guido Baroni^{1,3}, Sandro Rossi¹, and Marco Krenkli^{1,4}

¹Fondazione CNAO, Pavia; ²European Institute of Oncology, Milan; ³Politecnico di Milano, Milan;

⁴University of Piemonte Orientale, Novara, Italy

ABSTRACT

Proton beam radiotherapy, an innovative treatment modality, allows delivery of high radiation doses to the target while sparing surrounding healthy structures. The *Centro Nazionale di Adroterapia Oncologica* (CNAO), equipped with a synchrotron and capable of using both protons and ions, initiated its clinical activity in September 2011. The first treatment of a skull base tumor with protons is reported here.

The case of a 26-year-old man with an intracranial low-grade chondrosarcoma of the right petroclival junction is discussed with emphasis on technical and clinical details. Two previous surgical interventions had achieved partial removal of the tumor and the patient was treated with protons for residual disease. The prescribed dose was 70 GyE in 35 fractions of 2 GyE. Treatment was completed with minimal acute toxicity consisting of grade 1 alopecia and nausea. Nine months after treatment the disease is locally controlled. Use of high-energy protons at CNAO is a safe and effective means of treating a tumor located near critical normal structures.

Key words: proton therapy, chondrosarcoma, skull base, hadron therapy.

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Correspondence to: Roberto Orecchia, Fondazione CNAO, Strada Privata Campeggi, 27100 Pavia, Italy.
Tel +39-0382-078612;
fax +39-0382-078903;
email roberto.orecchia@cnao.it

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