

Background

The cystic craniopharyngiomas are benign lesions with slow tumor growth. The symptoms are related to space occupation, presenting compression of optical nerve, optic chiasm, hypothalamus and vascular structures. Mostly presented in the first and fifth decade of life, with posibles recurrence until 10 years after. Surgical resection is not the best therapeutic alternative in some cases due to the tumor localization and the risks, comorbidities and complications that may occur (Endocrine, visual, metabolic and cognitive impairment). In this patients, the therapeutic objective is to provide the best therapy for tumor control and minimal damage improving quality of life, were Intracavitary therapy with β radiation-emitting nuclides is an alternative.

B radiation-emitting nuclides (³²P, ⁹⁰Y, ¹⁸⁸Re) produce an localized radiation on the cyst wall containing secretory epithelium, with subsequent cystic fibrosis, decreasing the production of fluid with collapse of the lesion.

Objetives

To present the outcomes of patients with cystic craniopharyngiomas who were treated with stereotactic intracavitary irradiation with B radiation-emitting nuclides (³²P, ⁹⁰Y, ¹⁸⁸Re) as a primary or adjuvant treatment.

Methods

We present our experience from 1994 until 2014 in three patients with five therapies using different emitting radiopharmaceuticals B: ³²P, ⁹⁰Y, ¹⁸⁸Re-colloid. Two pediatric patients (age of 5 and 12 years old) and a 35 year old woman, with initial symptoms of space occupation (blindness and diabetes insipidus)

Patients were managed by a multidisciplinary group: nuclear medicine, neurosurgery, endocrinologists physicians, medical physics. Confirmation of pathology, lesion characterization (cystic / solid) was performed. Dosimetry calculations depending on the volume of the cyst was performed by medical physics. All patients signed informed consent.

Ommaya reservoir were placed under the scalp in the three patients. The administration of the radioisotope was performed in operating room, through the Ommaya reservoir, after draining the cyst and a late washed with saline and ^{99m}Tc. A post-therapy SPECT/CT images was adquired. Intra-hospitalary observation for 24 hours and corticosteroids medication. Clinical monitoring was performed every three months on the first year and every year after.

Afilations

^{1,3} Nuclear Medicine Unit of Fundación Valle del Lili, Cali, Colombia
² Clinical Research Center of Fundación Valle de Lili, Cali, Colombia

Results

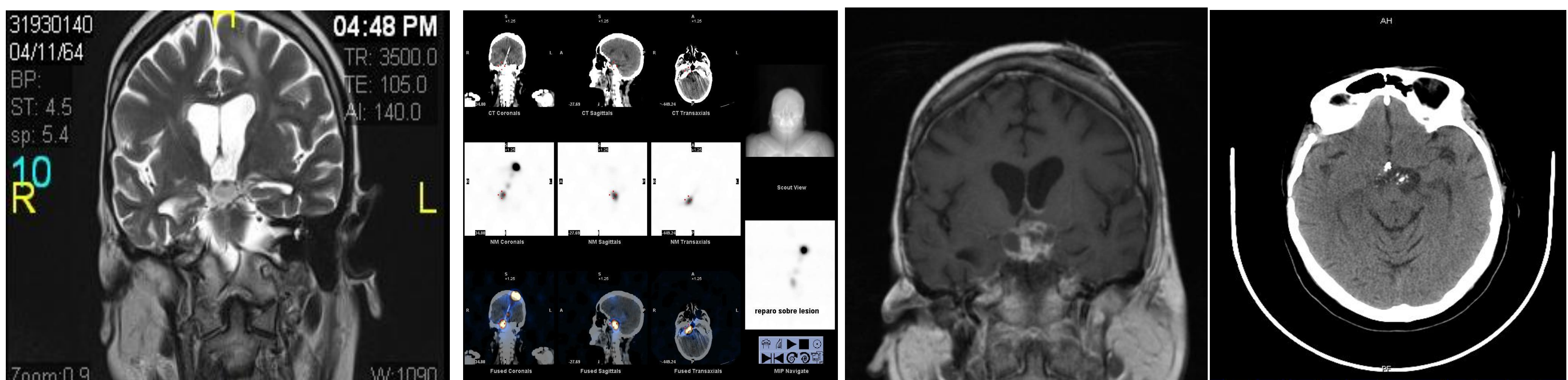
The two pediatric patients obtained excellent results with significance collapse of the cystic lesion, reduction of local symptoms and a normal child development. The adult patient presented cyst reduction, with partial improvement of symptoms.

FIRST CASE . Man 9 years (1995-1996) Lobed cystic craniopharyngioma with optic nerve compression . Hemianopsia . Severe decrease visual acuity. Headache, signs of intracranial hypertension
Three therapies ⁹⁰Y and two with ³²P Average dose 3-4 mCi , through Ommaya's reservoir . First therapy without success. ⁹⁰Y; Second and third different, different lobulations tumor .
Tumor size reduction : 80%.

Follow up 4 years post-therapy : systems technician , musician.

SECOND CASE . Women 41 years old (2008). Dx Cystic Craniopharyngiomas with compression of the optic nerve. blindness Dx since age 25 , multiple surgical procedures recurrence of injury. Symptoms: Headache, signs of intracranial hypertension .She received one Intracavitary therapy with ³²P : 3 mCi .
Tumor size reduction : 30%.

Follow up six years : stable patient with diabetes and hypothyroidism



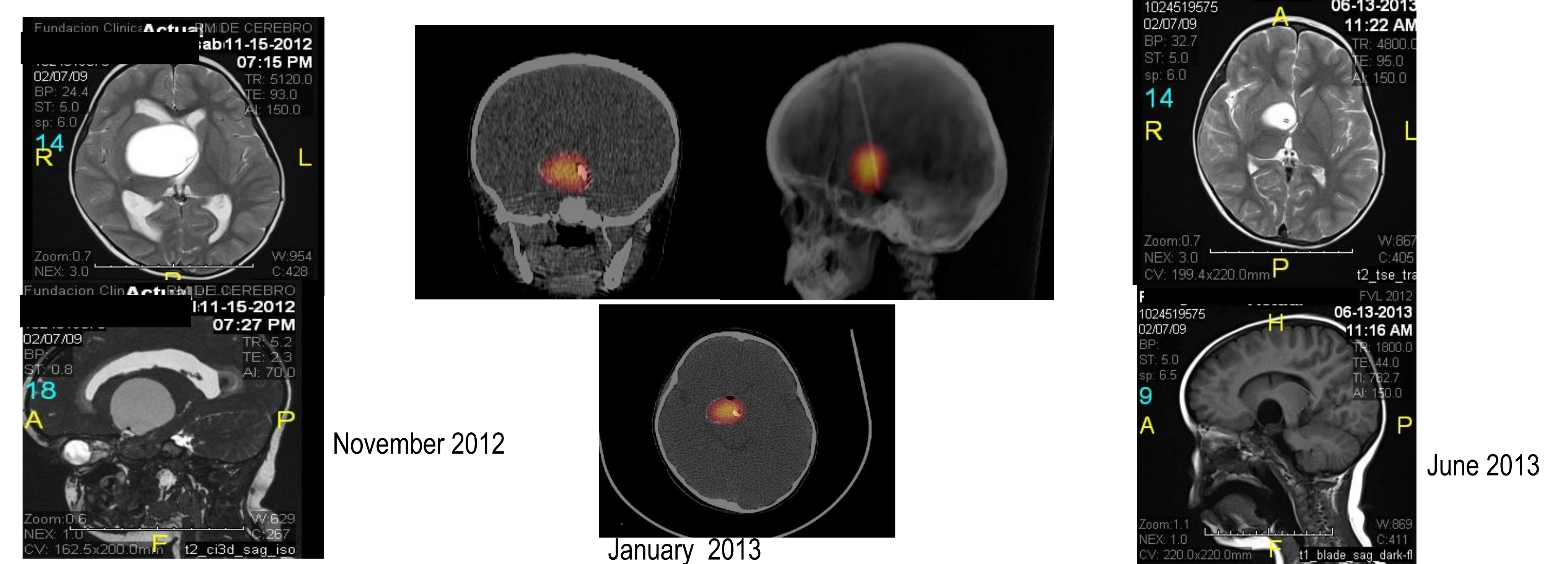
November 2007

January 2008

2010

THIRD CASE . Women 4 years old (2013) cystic craniopharyngioma Hypothyroidism. Hemianopia and intolerance to light. Headache ³²P therapy 2 mCi + 0.5 mCi ^{99m}Tc, for obtain imaging
Tumor size reduction 74%.

Follow up Two years: asymptomatic



November 2012

January 2013

June 2013

Conclusions

Intracavitary therapy with β radiation-emitting nuclides in cystic craniopharyngioma is an effective alternative therapy, easy handling, that can reduce compression symptoms and size of the cyst, offering a good quality life post-therapy. Ideally, the patient must be in an early stage of disease with minimal symptoms, prior to significant compression and brain structures damage.

Bibliography

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