

Plexiform neurofibroma and demyelinating lesions in a patient with GH deficiency treated with rGH

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Introduction

There have been concerns regarding the safety of recombinant growth hormone (rGH) administration in children with GH deficiency in relation to cancer risk as several experimental studies have revealed a mitogenic and proliferative role for both GH and insulin-like growth factor 1 (IGF-1). A recent systematic review that evaluated the link between rGH therapy and cancer found that standardized incidence ratio (SIR) for cancer was 2.74 (95% CI 1.18-5.41), but the cancer standardized mortality ratio (SMR) was not increased and the issue of rGH therapy safety remains a matter of debate.

Case report

M.D., F, 13 years old

The patient was submitted in our endocrine department for follow-up of GH therapy.

Medical history

February 2009 (7.5 ys)

- H=107cm (-4.5SD) ; W=18 Kg; BMI=15.72 kg/m²;
- Tanner P1G1;
- Clonidine test- max GH= 4.1 ng/ml
- BA: 5.5 ys
- Cerebral CT: normal

Diagnosed with short stature due to GH deficiency- started treatment with rGH 0.035 mg/kg/d

June 2010 (13 ys)

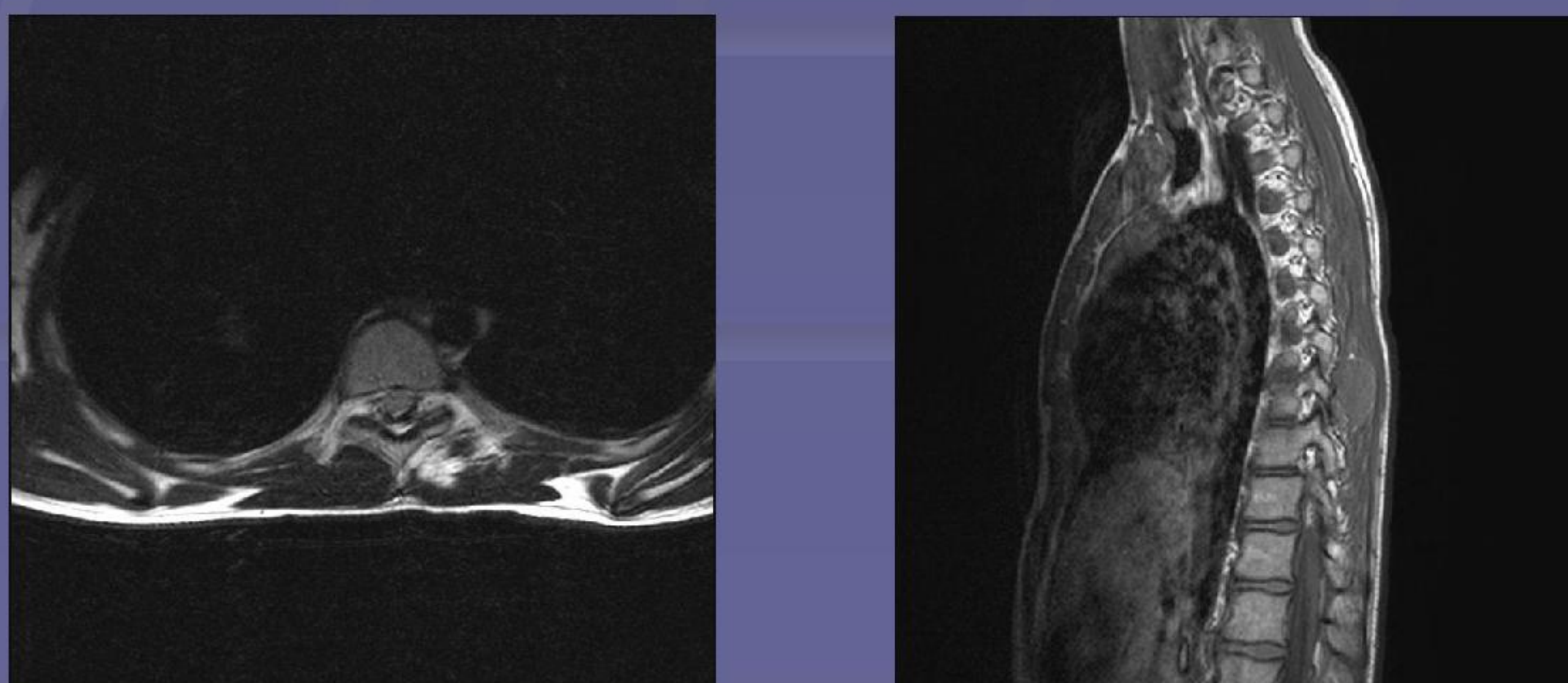
Physical exam

- H=149.9 cm (-0.74SD) ; W=39 Kg; BMI=17.35kg/m²;
- 96bpm, BP=90/70 mmHg;
- Tanner P3G3;
- subcutaneous left paravertebral tumor in the toracal region reported to be painful by the patient; the tumor had hard consistency, was mobile and had no sign of inflammation.

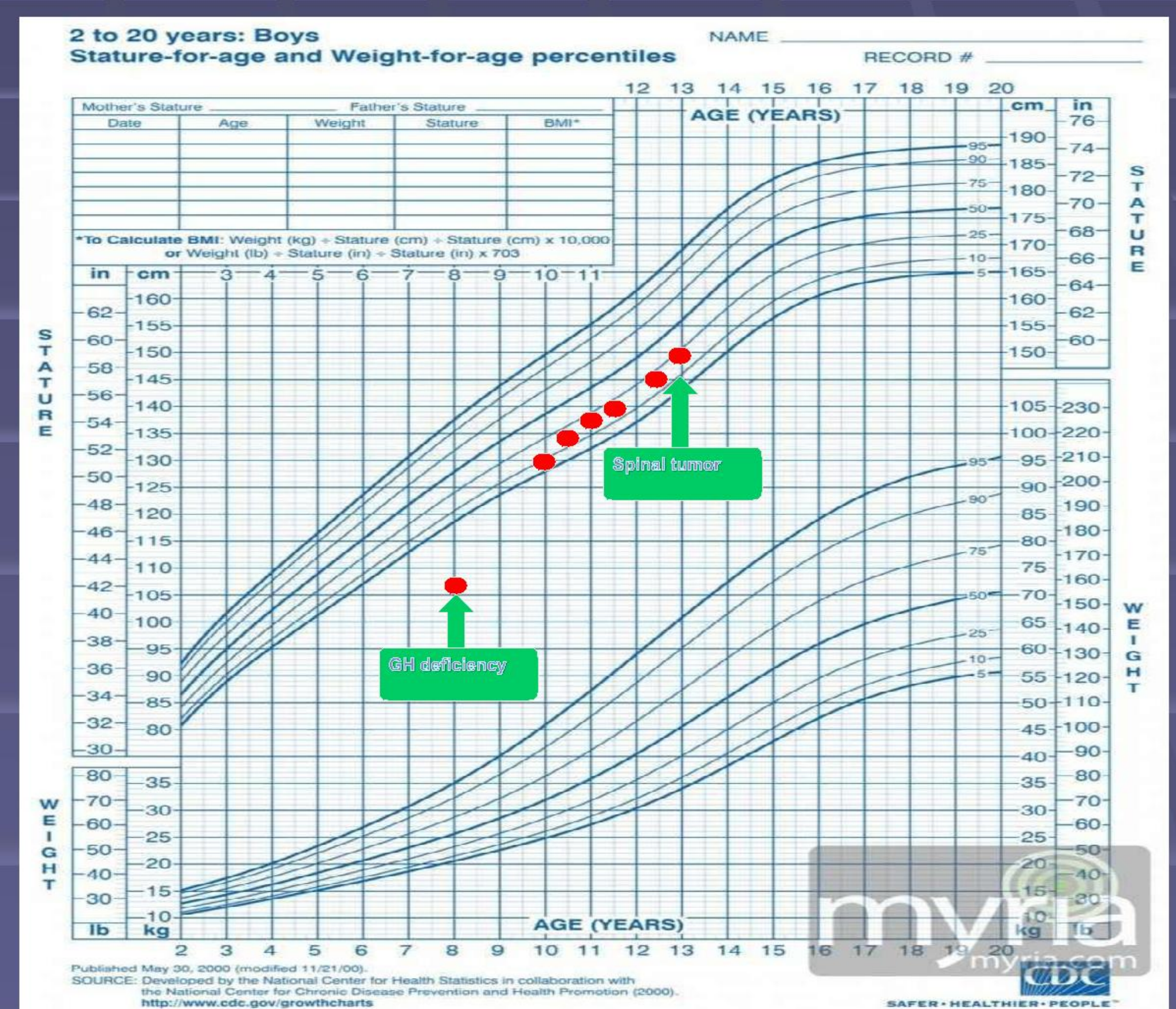
Laboratory tests

- IGF1 = 330ng/ml (143-693 ng/ml)
- TSH=3.88 microIU/ml (0.4-4.4 microIU/ml);
- FT4= 1.05 ng/dl (0.89-1.76 ng/dl)
- BA= 13 ys;
- **Spinal MRI** - left paramedian toracal tumor located from T7 to T9 with extension in the left VIIIth foramen that raised the suspicion for a toracal neurofibroma with intra and extraforamen extension.

Figure 1. Spinal MRI



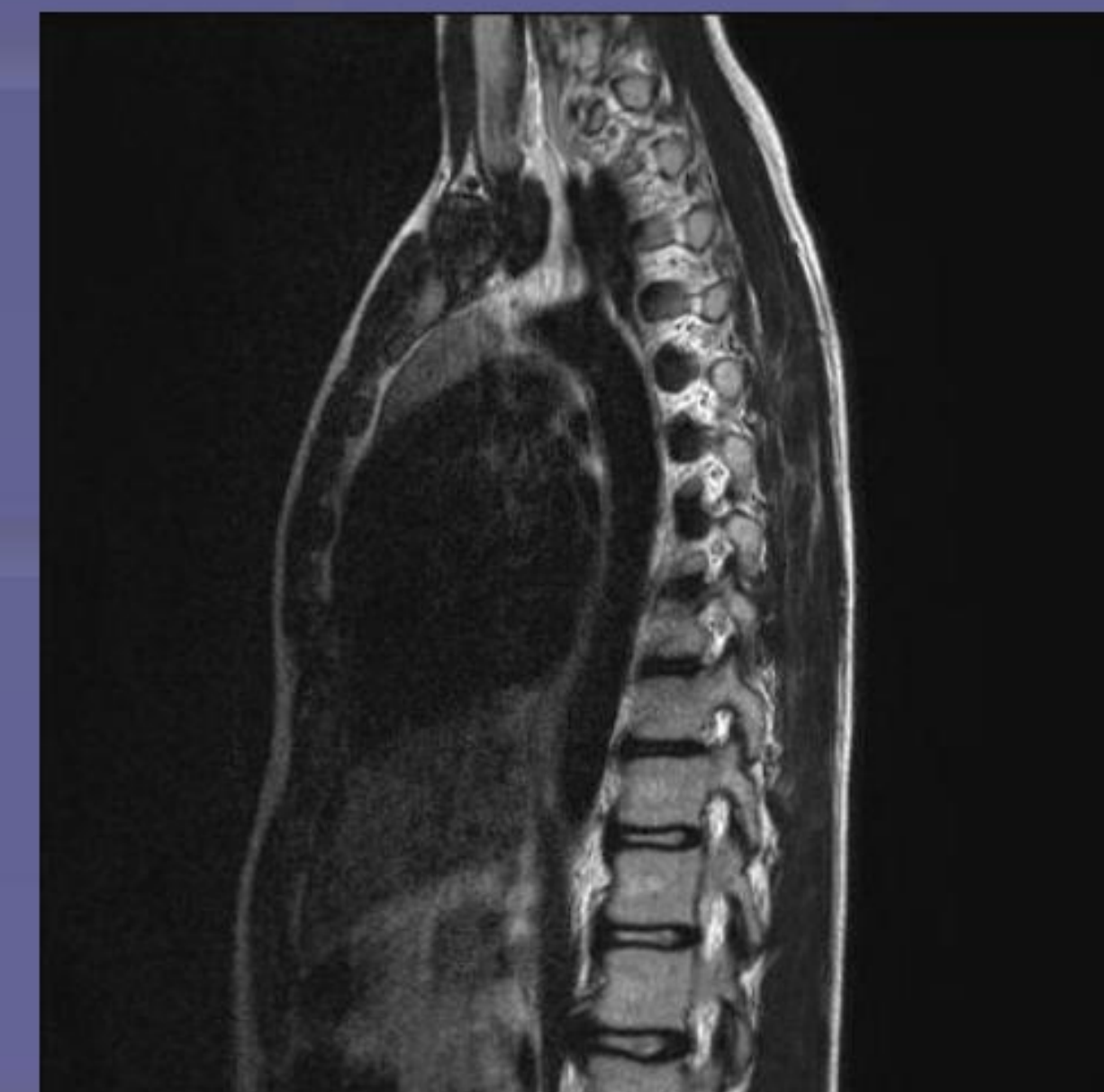
- Sent to neurosurgery
- **Biopsy** revealed a plexiform neurofibroma



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- Taking into account the patient's family complaint of child's poor scholar performance and memory loss, a **cerebral MRI** was done revealing some demyelinating supratentorial lesions; consequently, the patient is currently under evaluation in the pediatric neurology department.
- **Spinal MRI** showed no signs of restant tumor or relapse.

Figure 2. Check-up MRI



Particularity

In this case, a keypoint resides in the fact that the tumor was discovered early due to the periodic follow-up for GH therapy but another issue might be the continuance of the GH-therapy.

As well it will be important to find out if the two conditions are related to each other and part of a syndromic disease.

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