

# Radiocirugía en Tumores Raquimedulares

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5-8 de noviembre de 2017

# Clasificación

Extradural



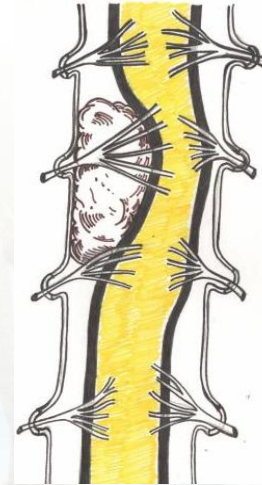
**Metástasis**  
**Cordomas**

Intramedular



**Ependimomas**  
**Gliomas**  
**Hemangioblastoma**  
**Metástasis**

Intradural extramedular



**Meningiomas**  
**Neurinomas**

[http://indoamericanhospital.blogspot.com.ar/2015\\_08\\_09\\_archive.html](http://indoamericanhospital.blogspot.com.ar/2015_08_09_archive.html)

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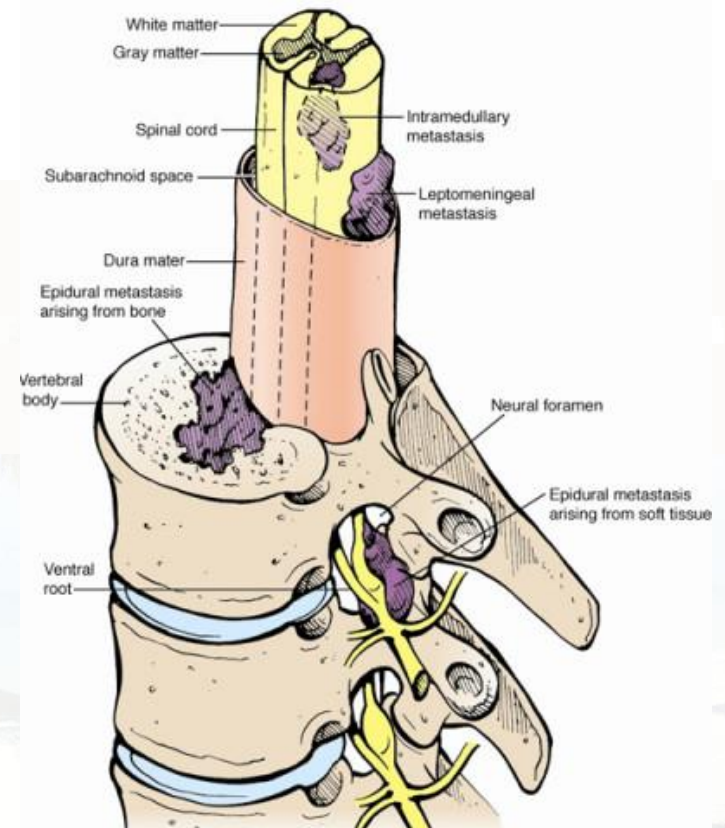
# Cirugía

## Indicaciones de Radioterapia

Tumores inoperables

Resección Parcial

Recidiva Tumoral

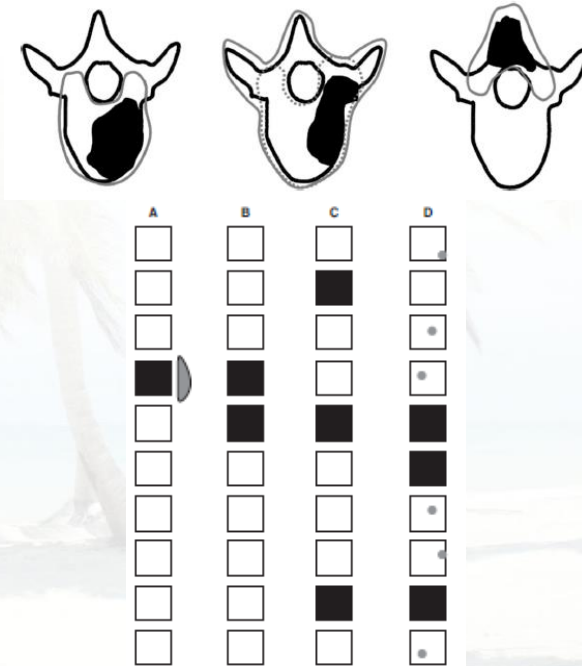


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# Metástasis

|                        | RPA                 |                     |                     |
|------------------------|---------------------|---------------------|---------------------|
|                        | Clase 1             | Clase 2             | Clase 3             |
| <b>T' desde el dx</b>  | <b>&gt;30 meses</b> | <b>&gt;30 meses</b> | <b>&lt;30 meses</b> |
| <b>KPS</b>             | <b>&gt;70</b>       | <b>&lt;70</b>       | <b>&lt;70</b>       |
| <b>Sobrevida media</b> | <b>21.1 meses</b>   | <b>8.7 meses</b>    | <b>2.4 meses</b>    |



Chao IJROBP 2011

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# Metástasis

Patchell: fase III

Ryu: fase II

Cirugia + EBRT

EBRT sola

SBRT

**Respuesta Global**

**84% (42/50)    57% (29/51)    81% (50/62)**

**Control en pts sin déficits**

94% (32/34)

74% (26/35)

88% (31/35)

**Control en pts con déficits**

62% (10/16)

19% (3/16)

59% (19/27)

Ryu S, Rock J, Jain R, et al. Radiosurgical decompression of metastatic epidural compression. Cancer 2010;116:2250-7.

Patchell RA, Tibbs PA, Regine WF, et al. Direct decompressive surgical resection in the treatment of spinal cord compression caused by metastatic cancer: a randomised trial. Lancet 2005; 366:643-8.

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# Re-irradiación

**+700 pts**

**Múltiples histologías**

**SBRT 1-5fr**

**Control local 80%**

Studies of SRS as re-irradiation therapy for spinal metastases.

| Study                 | Patients | Tumor type   | Total dose (Gy) | Fractions | Local control (%) | Follow-up (mo) |
|-----------------------|----------|--|-----------------|-----------|-------------------|----------------|
| Gerszten et al. [38]  | 374      | Renal cell, breast, lung, melanoma, colon, sarcoma, prostate, multiple myeloma, unknown primary, squamous cell laryngeal, thyroid, other   | 12.5–25         | 1         | 88                | 21             |
| Chang et al. [23]     | 54       | Renal cell, breast, sarcoma, lung cancer, melanoma, colon cancer, unknown and others   | 27              | 3         | 79                | 17.3           |
| Choi et al. [39]      | 51       | Breast, non-small cell lung, salivary gland, colorectal, thyroid, lymphoma, other  | 10–30           | 1–5       | 73                | 7              |
| Damast et al. [40]    | 97       | Renal cell, lung, prostate, breast, plasmacytoma, sarcoma, colorectal, thyroid, bladder, melanoma, salivary gland, adrenal, hemangiopericytoma, oral cavity, ovary, cervix, liver, endocrine gland | 20–30           | 5         | 61                | 12.1           |
| Garg et al. [60]      | 63       | Renal cell, thyroid, sarcoma, breast, lung, others   | 27–30           | 3–5       | 76                | 17.6           |
| Mahadevan et al. [41] | 81       | Lung, breast, renal cell, melanoma, gastrointestinal, other  | 24–30           | 3–5       | 93                | 12             |

*M. Bydon et al. / Clinical Neurology and Neurosurgery 125 (2014) 166–172*

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# Tumores Primarios

| Estudio       | Nº pts | Diagnóstico            | Dosis/Fracción | FU(meses) | % CL |
|---------------|--------|------------------------|----------------|-----------|------|
| Ryu 2003      | 10     | Hemangio, Ependimoma   | 18-25Gy/1-3fr  | 22        | 80   |
| Sinclair 2006 | 15     | MAV                    | 20Gy/2-5fr     | 36        | 90   |
| Adler 2006    | 36     | Meningioma - Neurinoma | 16-30Gy/1-5fr  | 24        | 100  |
| Daly 2011     | 27     | Hemangioblastoma       | 21Gy/3fr       | 12        | 80%  |
| Chang 2011    | 8      | Hemangioblastoma       | 25Gy/3fr       | 50        | 85%  |

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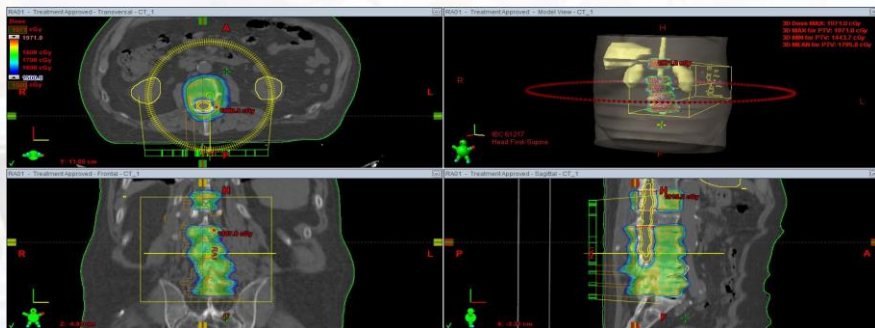


**LINAC dedicado**

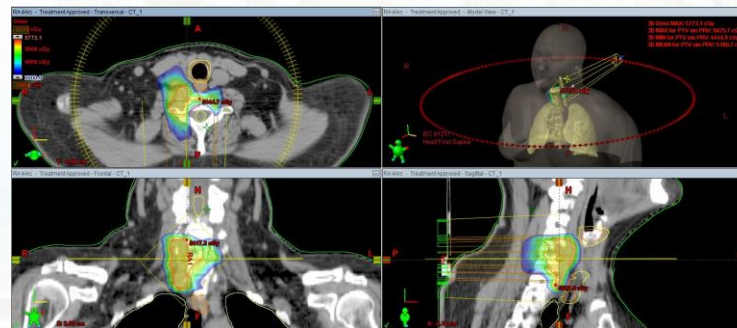
**IGRT**

**IMRT**

**Ca de mama - Metástasis**



**Cordoma**



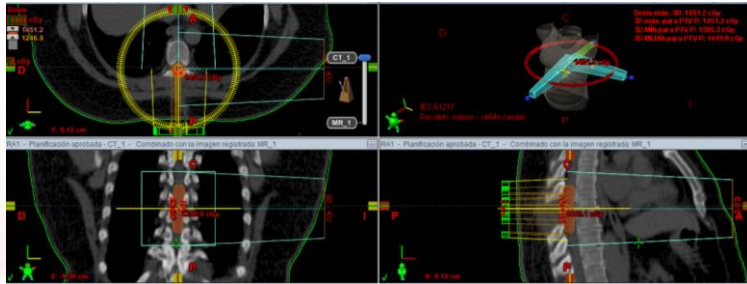
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## SBRT

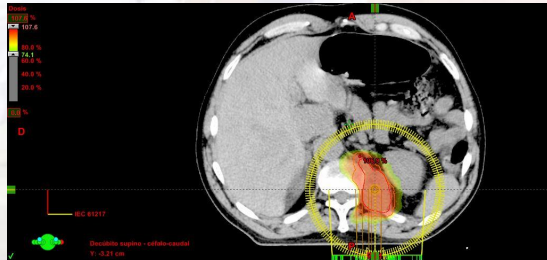
|                          | N° pts    | N° Target | Edad      | KPS       | Esquemas              |
|--------------------------|-----------|-----------|-----------|-----------|-----------------------|
| Próstata                 | 60        | 60        | 75        | 100       | 5fr(36,25Gy)          |
| Pulmón                   | 35        | 42        | 68        | 90        | 4-5fr(48-50Gy)        |
| <b>Óseo/Raquimedular</b> | <b>30</b> | <b>45</b> | <b>65</b> | <b>80</b> | <b>1-3fr(16-30Gy)</b> |
| Hígado                   | 12        | 12        | 60        | 90        | 5fr(45Gy)             |
| Adenopatías              | 10        | 10        | 65        | 90        | 5fr(30Gy)             |
| Cabeza y Cuello          | 10        | 5         | 55        | 90        | 5fr(40Gy)             |
| Pancreas                 | 8         | 8         | 68        | 80        | 5fr(25-35Gy)          |
| Oligometastasis          | 8         | 20        | 69        | 90        | 3-5fr(27-40Gy)        |

|       |     |     |
|-------|-----|-----|
| Total | 173 | 202 |
|-------|-----|-----|

## Ependimoma Intramedular



## Timoma - Metástasis



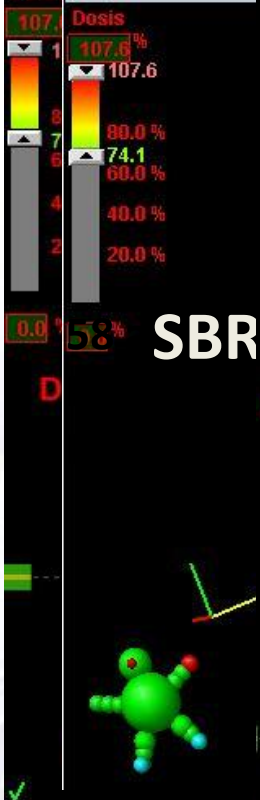
| Características de los pacientes | Valores         |
|----------------------------------|-----------------|
| Total de pacientes               | 22              |
| Total de localizaciones          | 30              |
| <b>Genero</b>                    |                 |
| Femenino                         | 13 (59%)        |
| Masculino                        | 9 (41%)         |
| <b>Edad (años)</b>               |                 |
| Promedio                         | 57              |
| Rango                            | 30-79           |
| <b>Diagnóstico</b>               |                 |
| <b>Metástasis</b>                | <b>20 (91%)</b> |
| Próstata                         | 8 (36%)         |
| Pulmón                           | 5 (23%)         |
| Melanoma                         | 4 (18%)         |
| otros                            | 3 (14%)         |
| <b>Primario</b>                  | <b>2 (9%)</b>   |
| Cordoma                          | 1 (4%)          |
| Ependimoma                       | 1(4%)           |
| <b>Esquema de SBRT</b>           |                 |
| 16-25Gy/1fr                      | 9 (41%)         |
| 27-30Gy/3fr                      | 13 (59%)        |

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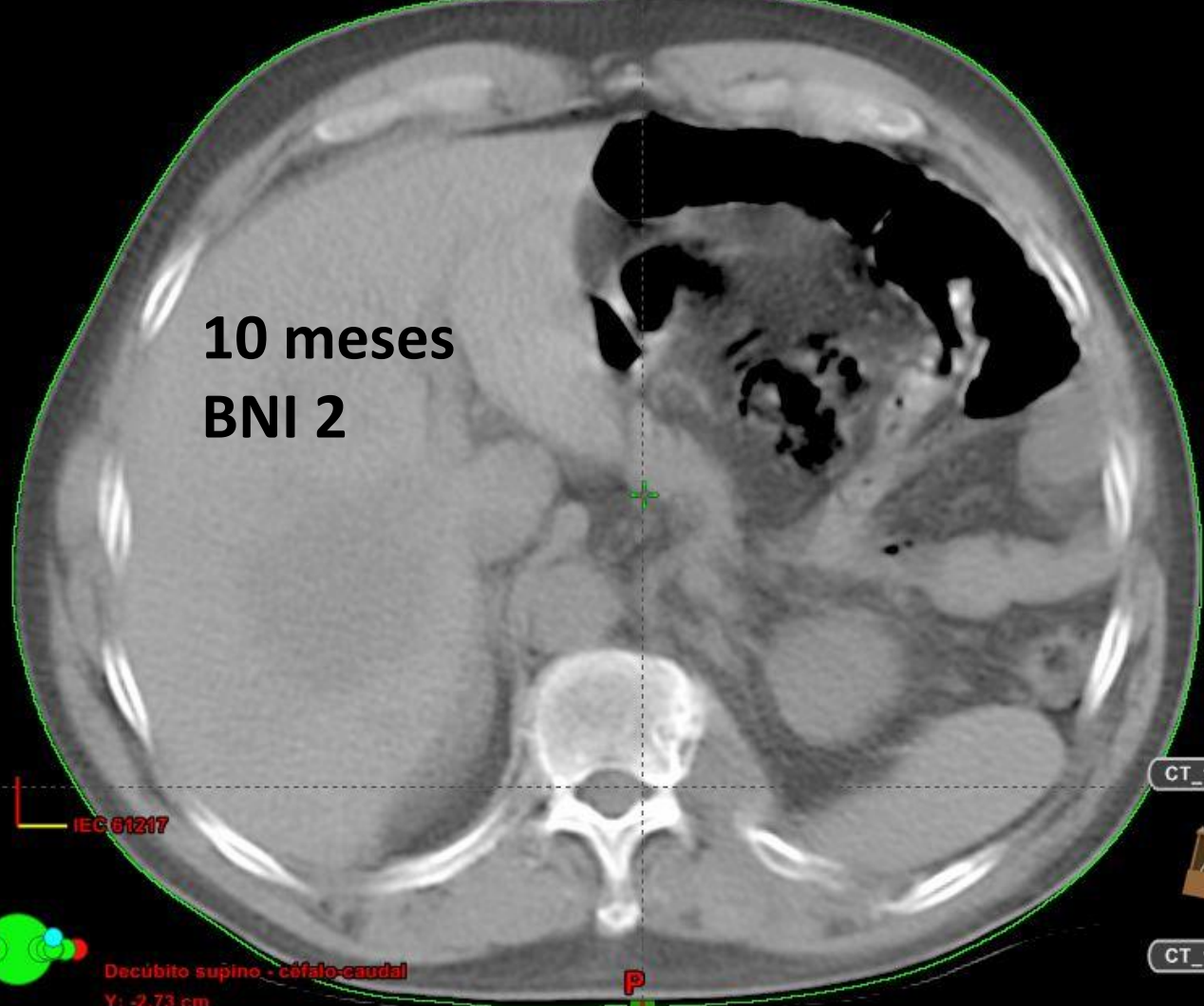

**Dosis**  
107.6 %  
107.6

80.0 %  
74.1  
60.0 %  
40.0 %  
20.0 %

0.0 % 5.0 % **SBR**



D D



IEC 61217

CT\_1

CT\_1

5-8



Decúbito supino - céfalo-caudal  
Y: -2.73 cm

P

com

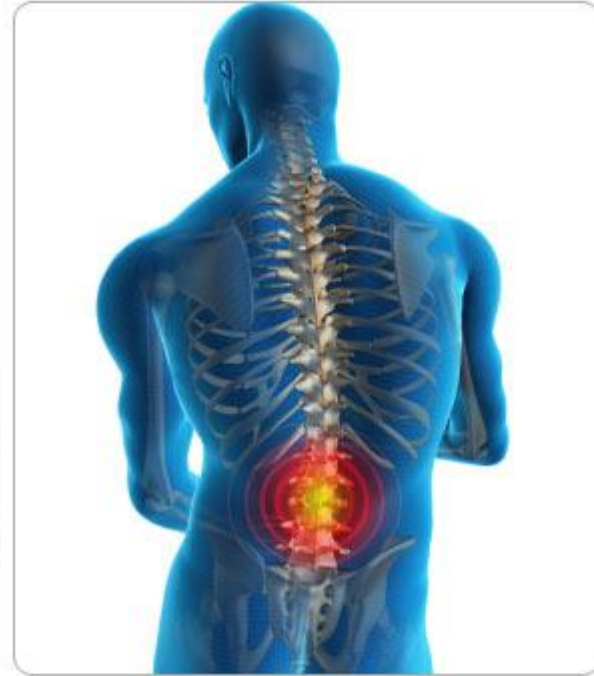
## SBRT en Tumores Raquimedulares

Eficaz

Control local

Elección del paciente

Abordaje Multidisciplinario



# MUCHAS GRACIAS POR SU ATENCION

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