



RECURSOS MÍNIMOS DE IGRT EM SBRT DE VÉRTEBRA

OTÁVIO RIANI



REALIZAÇÃO



SBRT
SOCIEDADE BRASILEIRA
DE RADIOTERAPIA

GERENCIAMENTO



AGÊNCIA OFICIAL



Declaração de Conflito de Interesse

Não tenho conflito de interesse a declarar

Exigência da RDC Nº 96/08 da ANVISA



TÓPICOS

- 1 – O início (cSBRT x SBRT)
- 2 – Tipos de IGRT para coluna
- 3 – Protocolos de SBRT
- 4 – Experiência HIGH ART
- 5 – Experiência Oncoville
- 6 – Experiência geral
- 7 - Conclusão



O INÍCIO (cSBRT x SBRT)

- *“nunca perca uma oportunidade”*

Hyago Cavalcante

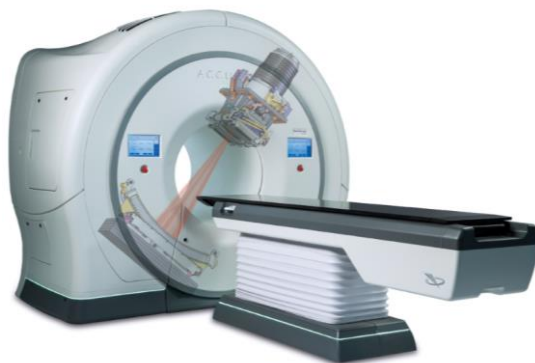


- *“1ª regra: nunca perca \$;
2ª regra: nunca esqueça a 1ª”*

Warren Buffett



TIPOS DE IGRT PARA COLUNA



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Radiotherapy and Oncology 95 (2010) 116–121



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journal homepage: www.thegreenjournal.com

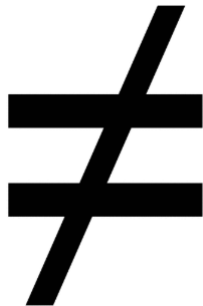


Spinal SBRT

6D image guidance for spinal non-invasive stereotactic body radiation therapy: Comparison between ExacTrac X-ray 6D with kilo-voltage cone-beam CT

Zheng Chang^{a,*}, Zhiheng Wang^a, Jinli Ma^{a,b}, Jennifer C. O'Daniel^a, John Kirkpatrick^a, Fang-Fang Yin^a

^aDepartment of Radiation Oncology, Duke University Medical Center, Durham, NC, USA; ^bDepartment of Radiation Oncology, Fudan University Cancer Hospital, Shanghai, China



Clinical Use of Dual Image-Guided Localization System for Spine Radiosurgery

Technology in Cancer Research and Treatment

ISSN 1533-0346

Volume 11, Number 2, April 2012

www.tcrt.org

Ning Wen, Ph.D., M.B.A.*

Nicole Walls, Ph.D.

Jinkoo Kim, Ph.D.

Jian-Yue Jin, Ph.D.



PROTOCOLOS DE SBRT

- AAPM TG-101
- ICRU-91
- Guideline FRO-RANZCR
- RTOG-0631
- Guideline ASTRO
- Papers

Stereotactic body radiation therapy: The report of AAPM Task Group 101

Stanley H. Benedict, Chairman^{a)}
University of Virginia Health System, Charlottesville, Virginia 22908

4078 Med. Phys. 37 (8), August 2010

**GUIDELINES FOR SAFE PRACTICE
OF STEREOTACTIC BODY (ABLATIVE)
RADIATION THERAPY**

FACULTY OF RADIATION ONCOLOGY



THE ROYAL AUSTRALIAN AND NEW ZEALAND COLLEGE OF RADIOLOGISTS*

ICRU REPORT No. 91

PRESCRIBING, RECORDING, AND REPORTING OF STEREOTACTIC TREATMENTS WITH SMALL PHOTON BEAMS

THE INTERNATIONAL COMMISSION ON
RADIATION UNITS AND
MEASUREMENTS
(Published July, 2017)



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0360-3016/\$ - see front matter
doi:10.1016/j.ijrobp.2011.04.039

CRITICAL REVIEW

IMAGING FOR STEREOTACTIC SPINE RADIOTHERAPY: CLINICAL CONSIDERATIONS

MAX DAHELE, M.B.Ch.B., M.Sc.,^{a)} JAAP D. ZINDLER, M.D.,^{a)} ESTHER SANCHEZ, M.D.,[†]
WILKO F. VERBAKEL, Ph.D.,^{a)} JOOST P. A. KUIJER, Ph.D.,[‡] BEN J. SLOTMAN, M.D., Ph.D.,^{a)}
AND SURESH SENAN, Ph.D., F.R.C.R.^{a)}

^{a)}Department of Radiation Oncology, VU University Medical Center, Amsterdam, The Netherlands; [†]Department of Radiology, VU University Medical Center, Amsterdam, The Netherlands; and [‡]Department of Physics and Medical Technology, VU University Medical Center, Amsterdam, The Netherlands

ASTRO Health Policy Coding Guidance

JANUARY 2013

IMAGE GUIDED RADIATION THERAPY CODING AND PHYSICIAN SUPERVISION GUIDELINES



EXPERIÊNCIA “HIGH ART”



EXPERIÊNCIA “HIGH ART”

Guckenberger et al. *Radiation Oncology* 2011, **6**:172
<http://www.ro-journal.com/content/6/1/172>

Clinical practice of image-guided spine radiosurgery - results from an international research consortium

Matthias Guckenberger^{1*}, Reinhart A Sweeney¹, John C Flickinger^{2,3}, Peter C Gerszten^{2,4}, Ronald Kersh^{5,6}, Jason Sheehan⁷ and Arjun Sahgal⁸

	UHW	UPMC	UofT	UVAMC	RSMC
Treatment prone or supine	Supine	Supine	Supine	supine	Supine
Immobilization device	Cervical: Thermoplastic mask; otherwise BodyFIX	Cervical down to T5: aquaplast face mask; otherwise BodyFIX	Cervical down to T2/3 s frame; otherwise BodyFIX	Cervical: Thermoplastic mask; otherwise BodyFIX	Cervical: Aquaplast mask with Accuform support secured to modified S-frame; otherwise BodyFIX
Image guidance technology	Cone-beam CT	Cone-beam CT	Cone-beam CT	Cone-beam CT	Cone-beam CT
Frequency of IGRT	Daily	Daily	Daily	Daily	Daily
Correction of rotational set-up errors	Yes - Hexapod couch	Yes - Hexapod couch	Yes - Hexapod couch	Yes - Hexapod couch	Yes - Hexapod couch
Action level for correction of set-up errors	1 mm translation, 1 degree rotation	1 mm translation, 1 degree rotation	1 mm translation, 1 degree rotation	2 mm translation, 1 degree rotation	1 mm translation, 0.3 degree rotation
Second imaging after couch adjustment prior to treatment	Yes	Yes	Yes	Yes	Yes
Methods for intra-fractional patient monitoring	None	Cone-beam CT imaging after one and two thirds through the treatment	One to two intra-treatment Cone-beam CT scans	One intra-fraction cone-beam CT scan half-way through treatment	Typical one or two mid-treatment cone-beam CTs
Imaging after treatment	Yes	No	Yes	Yes	No



EXPERIÊNCIA ONCOVILLE

- CL600 CD adaptado com Exactrac
 - 2 x 2D = 3D
 - 6D mesa
 - snap shot
 - 1mm e 1º (ideal), 2mm e 1º (limite ação)
- ~ 30 casos
 - 1 x (18 - 20)Gy ou 3 x (8 - 9)Gy
- VacLok ou mascara ombro



EXPERIÊNCIA GERAL



CONCLUSÕES

- Não existe o “correto”
- Importante é aprender com:
 - Colegas
 - Outras instituições
 - Literatura
- Começar fazendo aos poucos até ganhar confiança no sistema.
- O feito é melhor que o perfeito não feito!



Otávio Riani

otavio.riani@yahoo.com.br

fisica.oncoville@gmail.com



(41) 9.9610-7800

OBRIGADO!