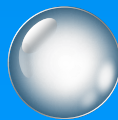
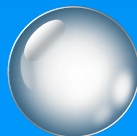
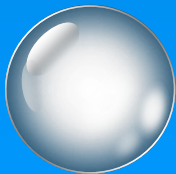
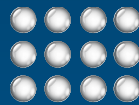


椎体转移瘤的适形及旋转计划设计

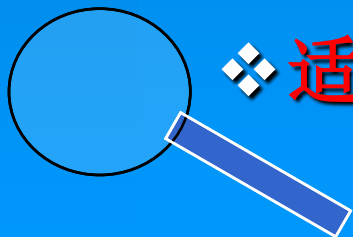
天津医科大学总医院 王克强





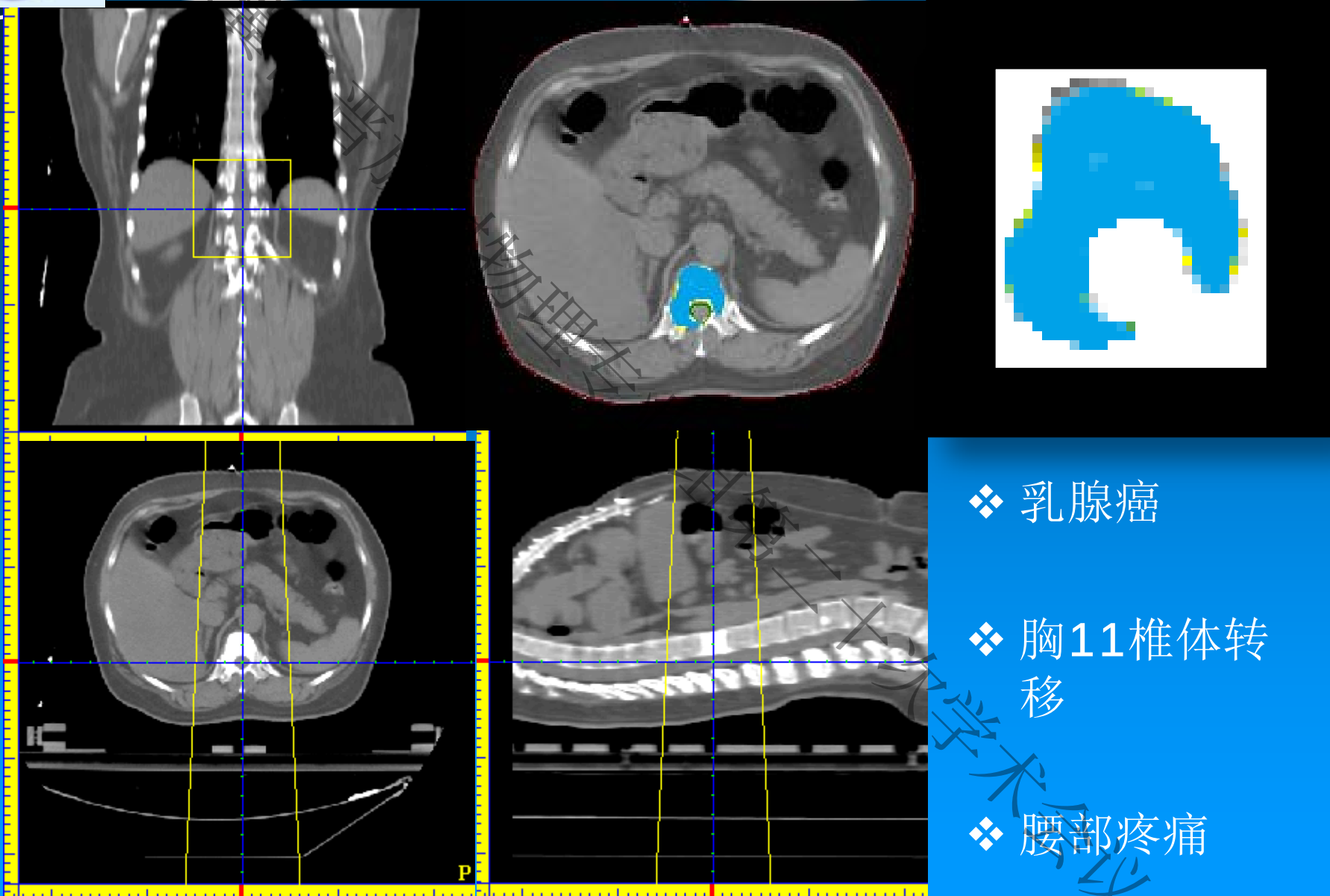
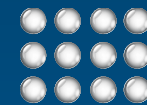
关于椎体转移瘤

- ❖ 肺癌、乳腺癌常出现椎体转移
- ❖ 治疗目的：缓解疼痛
- ❖ 靶区特点：脊髓限制，形成凹形靶区
- ❖ 放疗技术：**IMRT**、**VMAT**
- ❖ 适形或旋转照射可以吗？





看靶区



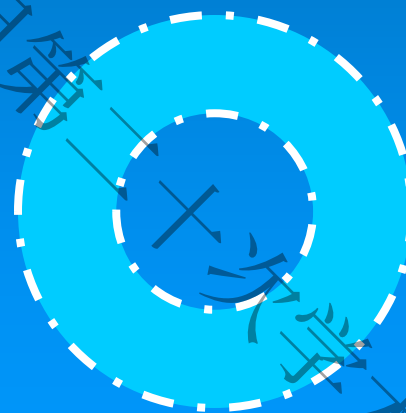
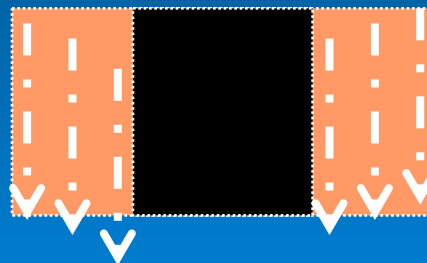
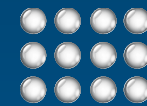
❖ 乳腺癌

❖ 胸11椎体转移

❖ 腰部疼痛

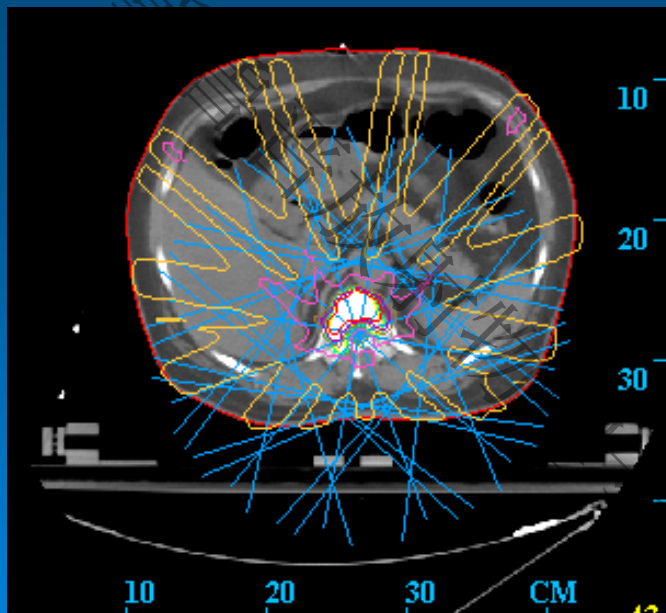
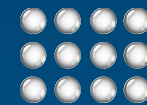


学数学的看靶区



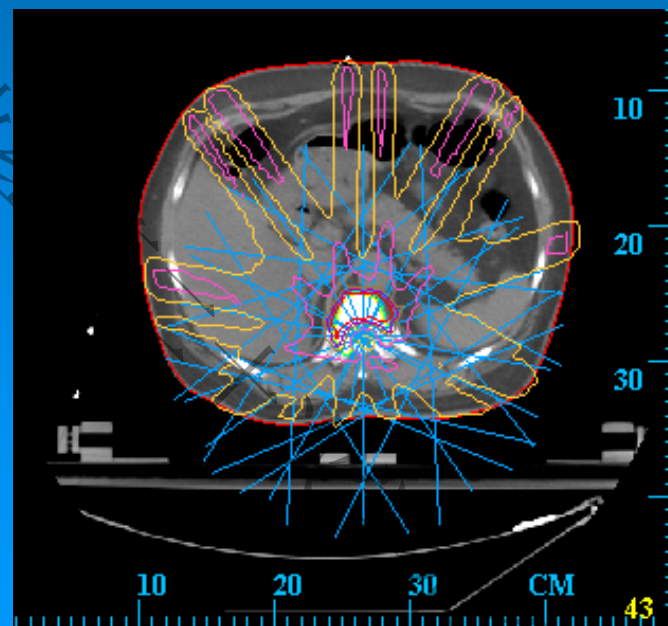


近似思想设计



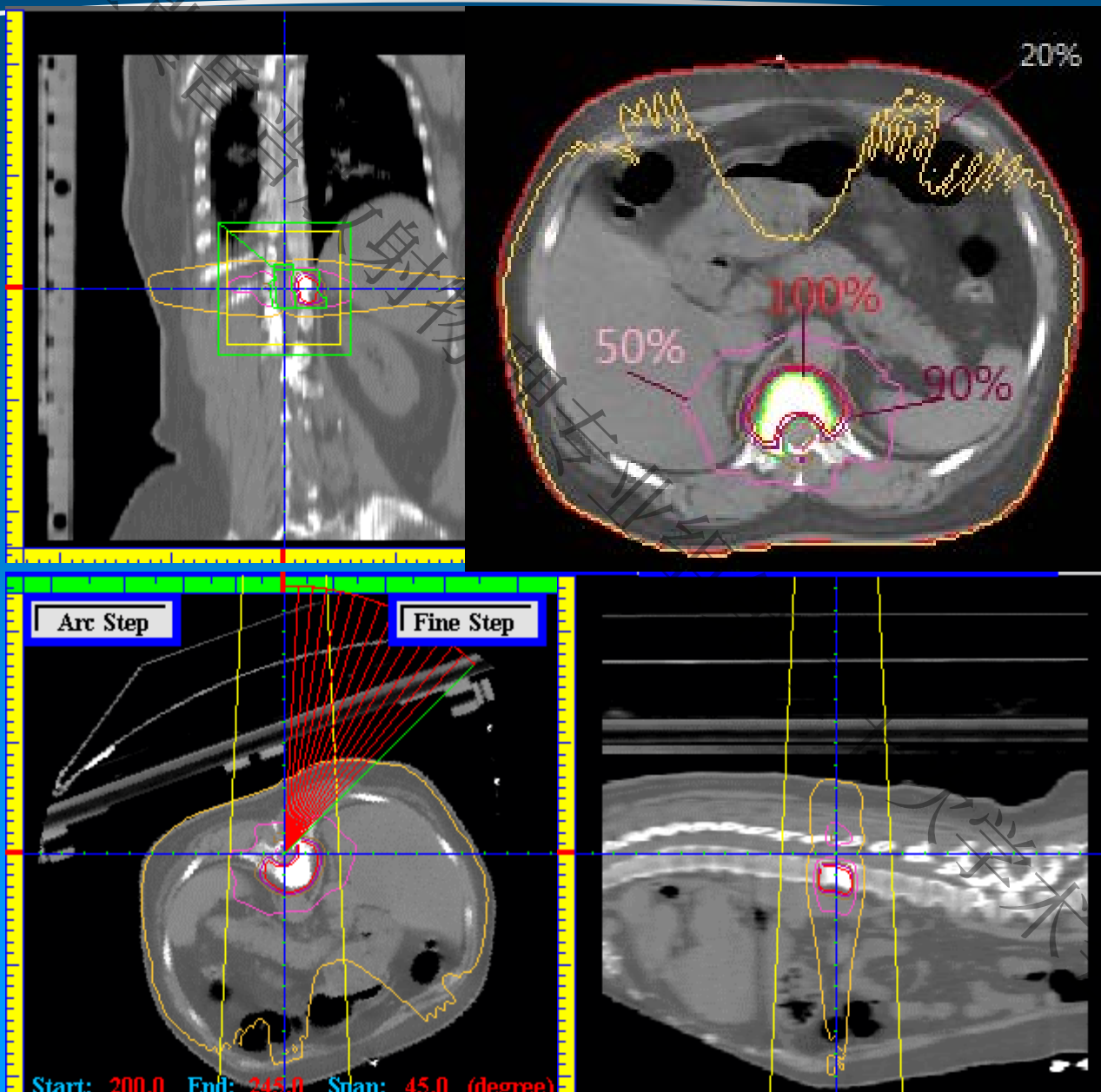
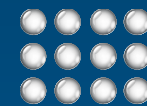
7个适形野，脊髓
处遮挡

10个适形野，脊
髓处遮挡



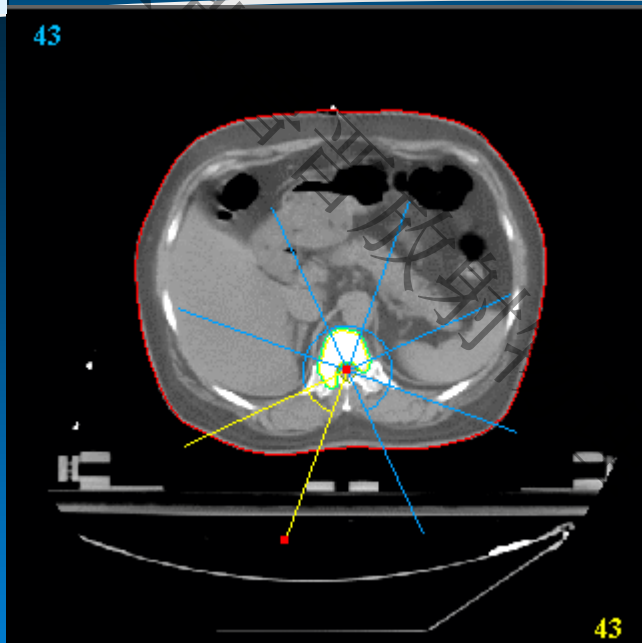
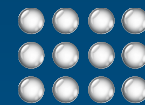


旋转照射来看看



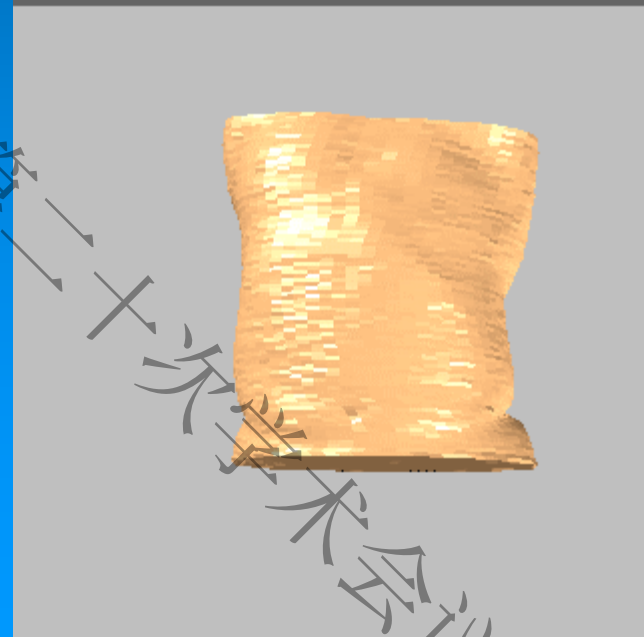


分弧设置



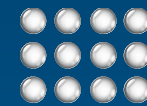
- ❖ 弧度划分原则：同弧内各角度靶区投影和脊髓投影相对位置变化小，可用一个适形野近似
- ❖ 分弧个数：5—7个。

- ❖ 射野中心放在脊髓中心
- ❖ 弧起始角大于射野中心和靶区边缘连线15—20度。
- ❖ 终止角设置同起始角类似





CTV $\longrightarrow$ PTV

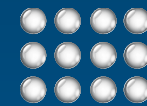


❖ PTV为CTV外放
 $n(3)\text{mm}$ 边界，
但在临近脊髓处
除外，由系统精
度和摆位精度确
定。

❖ PRV为OAR外放 n
 mm 边界，是否
可以和PTV交叠？



病人体位及固定



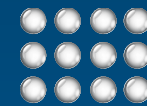
1. 体位：仰卧还是俯卧？ 俯卧

2. 固定：负压真空垫。

3. 对疼痛厉害的患者，治疗前可以用药止痛。



如何保证摆位准确——验证



1.

CBCT EPID

2.

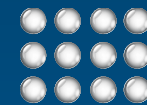
验证片

3.

模拟定位机上验证



剂量分次方案



短程

长程

1周

- 5次
- 4Gy

2天

- 2次
- 8Gy

1天

- 1次
- 8Gy

4周

- 20次
- 2Gy

3周

- 15次
- 2.5Gy

2周

- 10次
- 3Gy



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Phase III randomised trial

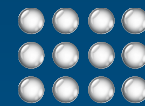
8 Gy single-dose radiotherapy is effective in metastatic spinal cord compression: Results of a phase III randomized multicentre Italian trial

Ernesto Maranzano^{a,*}, Fabio Trippa^a, Michelina Casale^a, Sara Costantini^a, Marco Lupattelli^b, Rita Bellavita^b, Luigi Marafioti^c, Stefano Pergolizzi^d, Anna Santacaterina^d, Marcello Mignogna^e, Giovanni Silvano^f, Vincenzo Fusco^g

Your site here

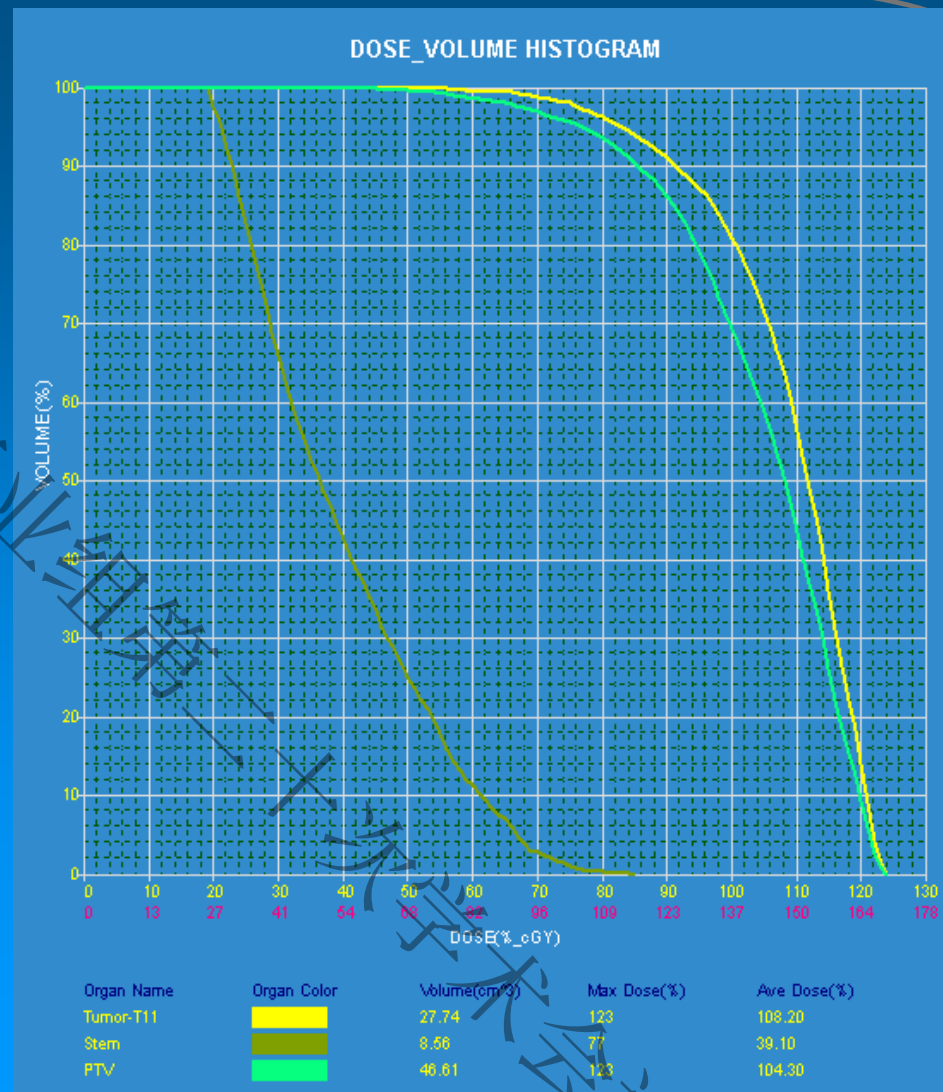


剂量特点



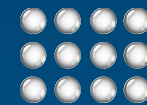
❖ 虽然大部分脊髓受量在50%等剂量曲线外，但还是有部分脊髓受量超过70%，是否可以接受？

❖ 靶区内的高剂量是否可以接受？





脊髓的BED



		8GY× 1次	8GY× 2次	4GY× 5次	3GY× 10次	2.5GY ×15次	2GY× 20次
$\alpha/\bullet=2.5$	BED	26	53	42	54	61	59
	BED(2Gy)	14	29	23	30	34	33
$\alpha/\bullet=0.87$	BED	63	127	88	105	115	105
	BED(2Gy)	19	38	27	32	35	32



International Journal of Radiation
Oncology*Biology*Physics

Volume 71, Issue 5, 1 August 2008, Pages 1455–1459



Clinical Investigation

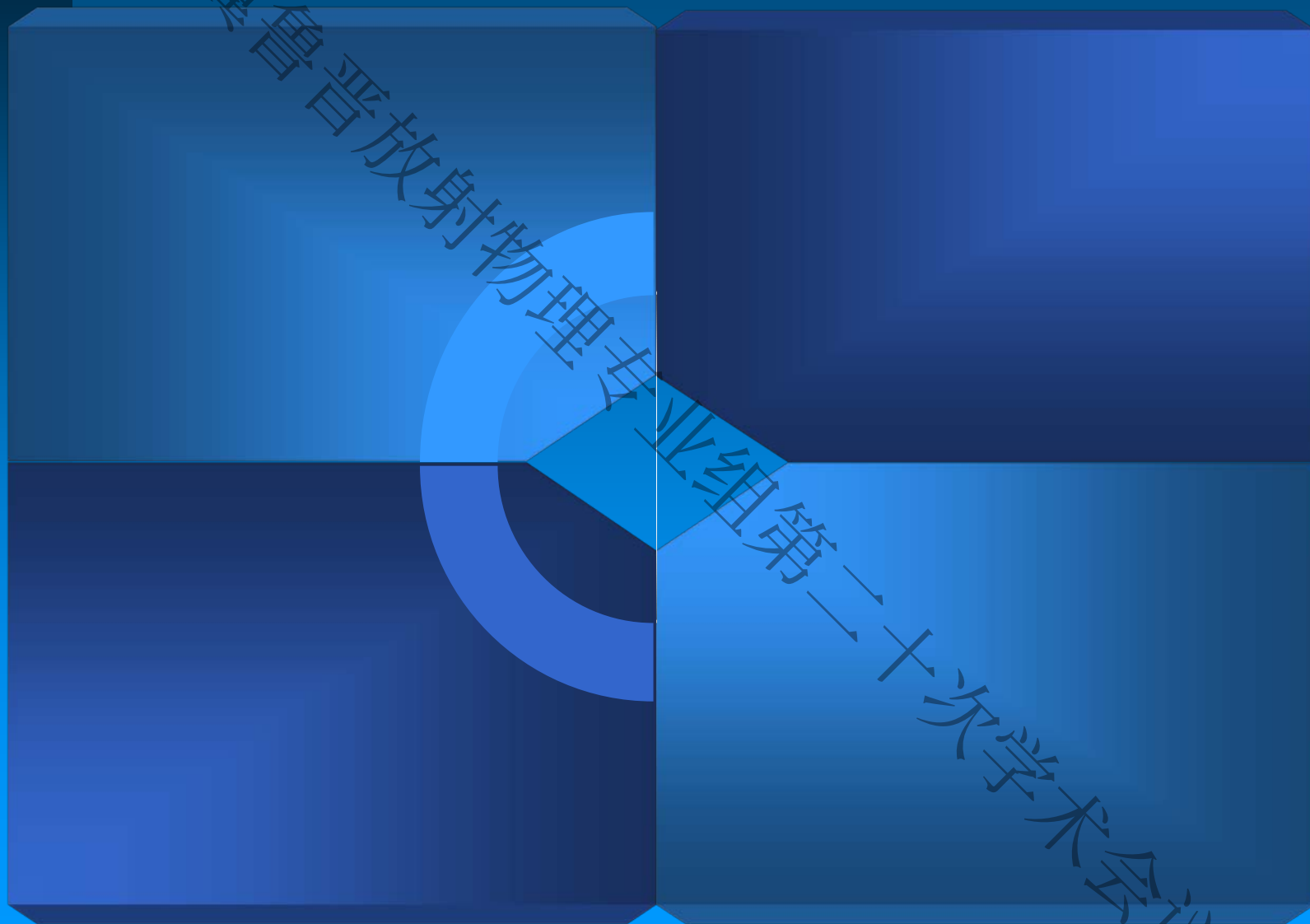
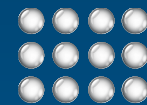
The Radiation Dose–Response of the Human Spinal Cord

Timothy E. Schultheiss, Ph.D.  

Your site here

LOGO

结论



Your site here

祝大家新春快乐
万事如意

