



Dipartimento Diagnostica
per Immagini e Radiologia
Interventistica
dell'Azienda USL Valle d'Aosta

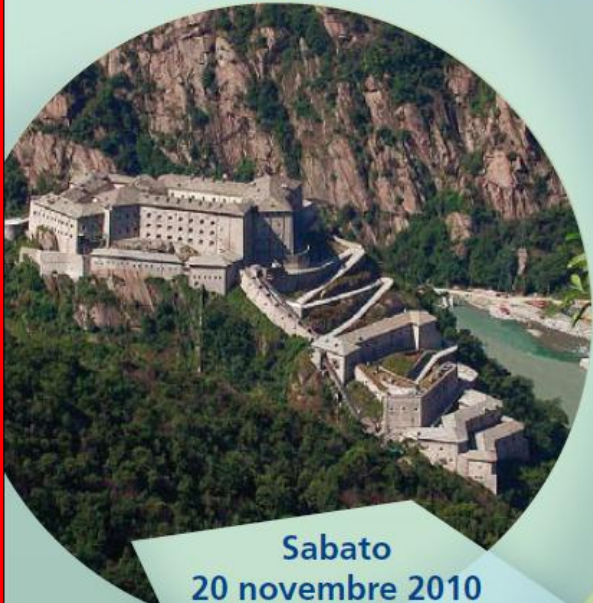


Région Autonome
Vallée d'Aoste
Regione Autonoma
Valle d'Aosta
Accompagnati da la Santé
du Mandant et des
Pallazzi sanza
Assistenti Sanità,
Salute e Politiche sociali

CONVEGNO

La TOMOTERAPIA in Italia: Esperienze a confronto

Presidenti: Umberto Ricardi - Teodoro Meloni



Sabato
20 novembre 2010



Forte di Bard

11020 Bard (AO) - Tel. 0125.833.816

5 CREDITI ECM

Forte di Bard – 20 Novembre 2010

La Tomoterapia in Italia: Esperienze a confronto

**L' esperienza di Aosta
TomoDirect**

Pierfrancesco Franco, MD

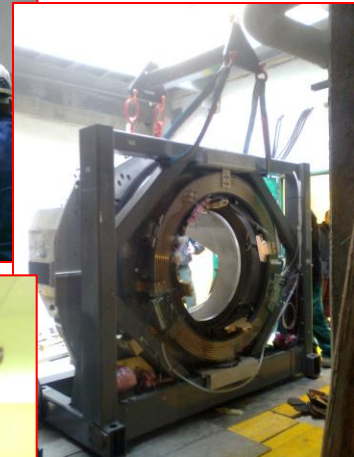
Paola Catuzzo, PhD

SC Radioterapia Oncologica

SC Fisica Sanitaria

Ospedale Regionale 'Umberto Parini'- Aosta





April 2010: settlement at site



Departmental solution

AOSTA

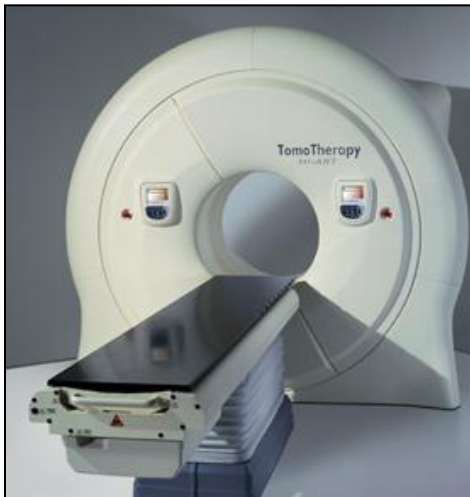
IVREA

Treatment Planning System
Tomotherapy
Pinnacle

Tomotherapy

Elekta Linac
Static MLC

Varian Linac
Dynamic micro-MLC
IGRT




Tomotherapy in Aosta: 300° worldwide

Tomotherapy Installs 300th Hi-Art Treatment System

17 Wednesday, 14 April 2010 06:57 |   

[Company News - TomoTherapy Incorporated](#)

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TomoTherapy Incorporated announced the 300th installation of its flagship Hi-Art treatment system worldwide

TomoTherapy Incorporated, maker of advanced, integrated radiation therapy solutions for cancer care, announced the 300th installation of its flagship **Hi-Art treatment system**. With the introduction of **TomoTherapy** technology, Ospedale Regionale Umberto Parini of Aosta, Italy, is expanding beyond its diagnostic services to offer **image-guided radiation therapy (IGRT)**. The hospital's **TomoTherapy** Hi-Art treatment system, equipped with TomoHelical and TomoDirect delivery capabilities, is the only linear accelerator installed in the Valle d'Aosta region.



Tomotherapy in Modena since May 2008

Prostate cancer at first

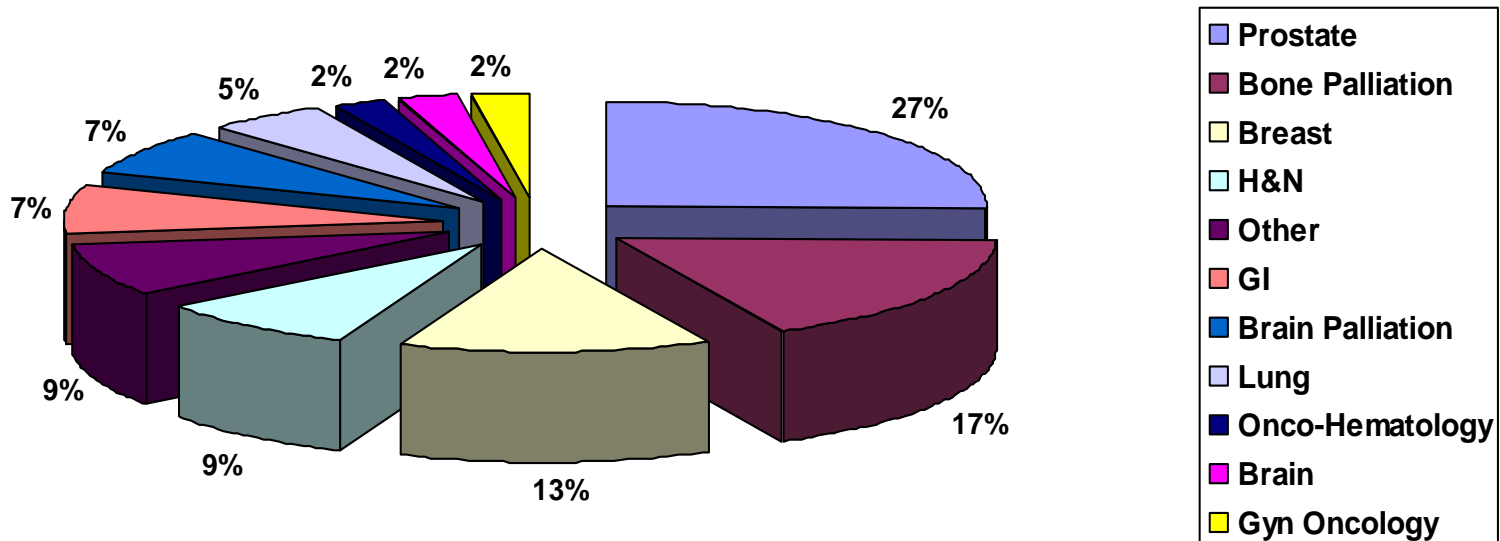
- ✚ May 24th 2010: first 2 patients
- ✚ Low risk prostate cancer
- ✚ Conventionally fractionated
- ✚ Prostate gland only
- ✚ 78 Gy/39 fr
- ✚ Helical Tomotherapy



What we did so far

June → November 2010: 82 patients treated

Patients



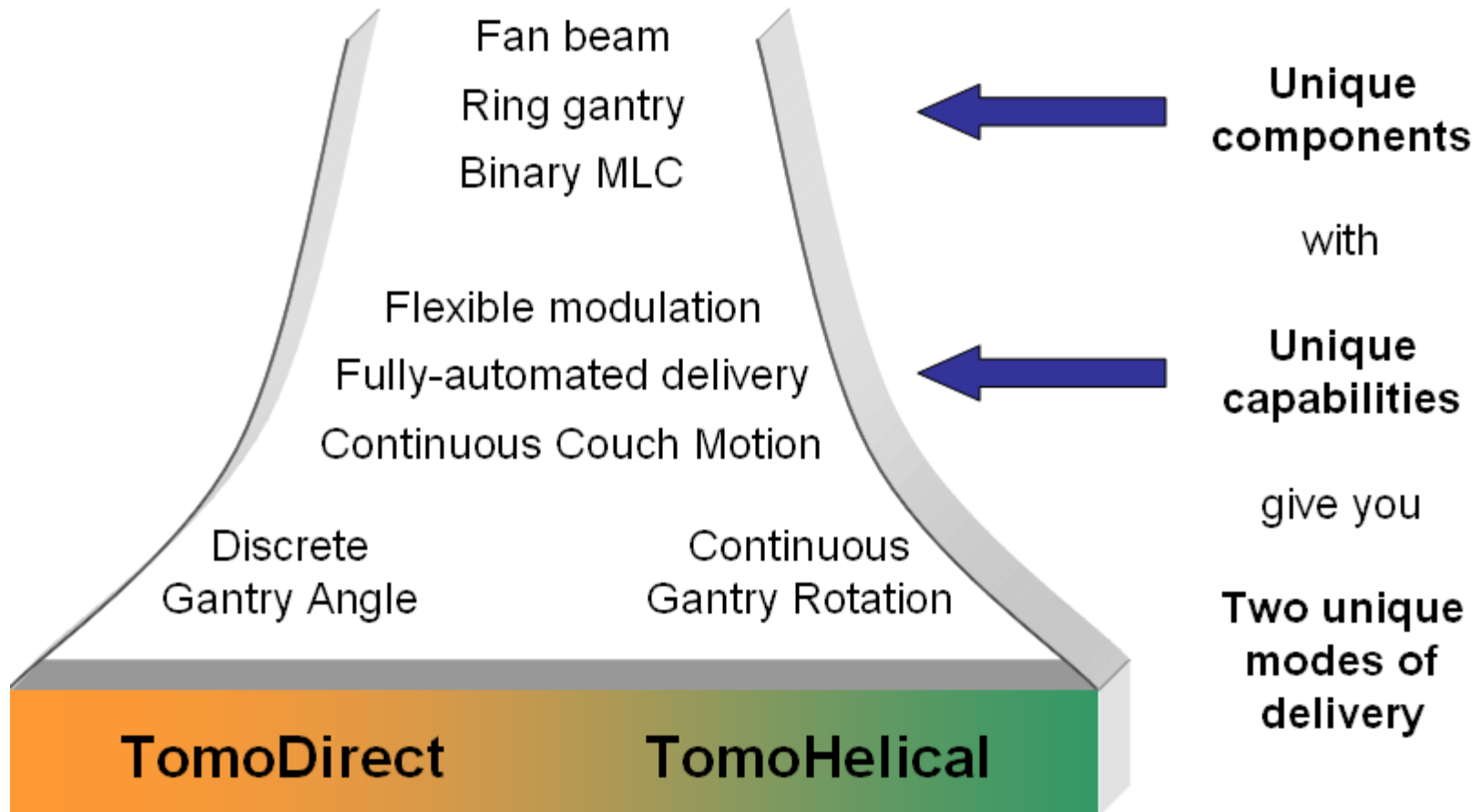
By the way a Tomo-only site

- ✚ The need to stop the gantry from rotating for simple cases
- ✚ Traditional tangential beams treatments
- ✚ Increased throughput
- ✚ Comparable treatment quality as HT

How to solve the issue?

TomoDirect

Two unique dose delivery modes



Why discrete angles in certain clinical contexts ?

- ✚ **Increased integral dose** (to body districts that would normally receive only scatter radiation)
- ✚ **Dosimetric constraints assignment to 'blocked structures'**
- ✚ **Treatment delivery limited to fewer directions**
- ✚ **Unnecessary prolonged treatment time** (more gantry rotations needed to deliver the prescribed dose)
- ✚ **Optimization challenge** (extensive use of beam modulation and widespread arc of directional blocking)

TomoDirect: clinical context

Fast Binary MLC



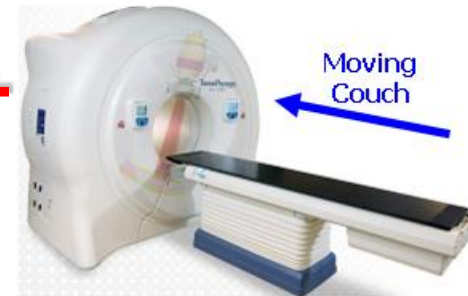
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Discrete Beam Angles

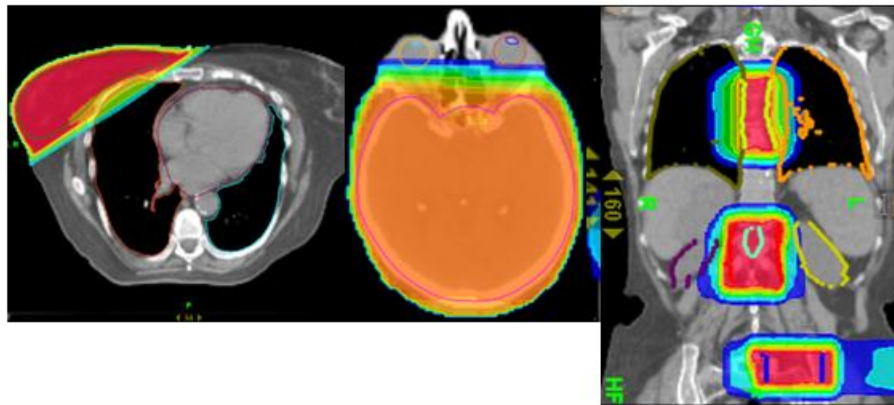


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Continuous Couch Motion

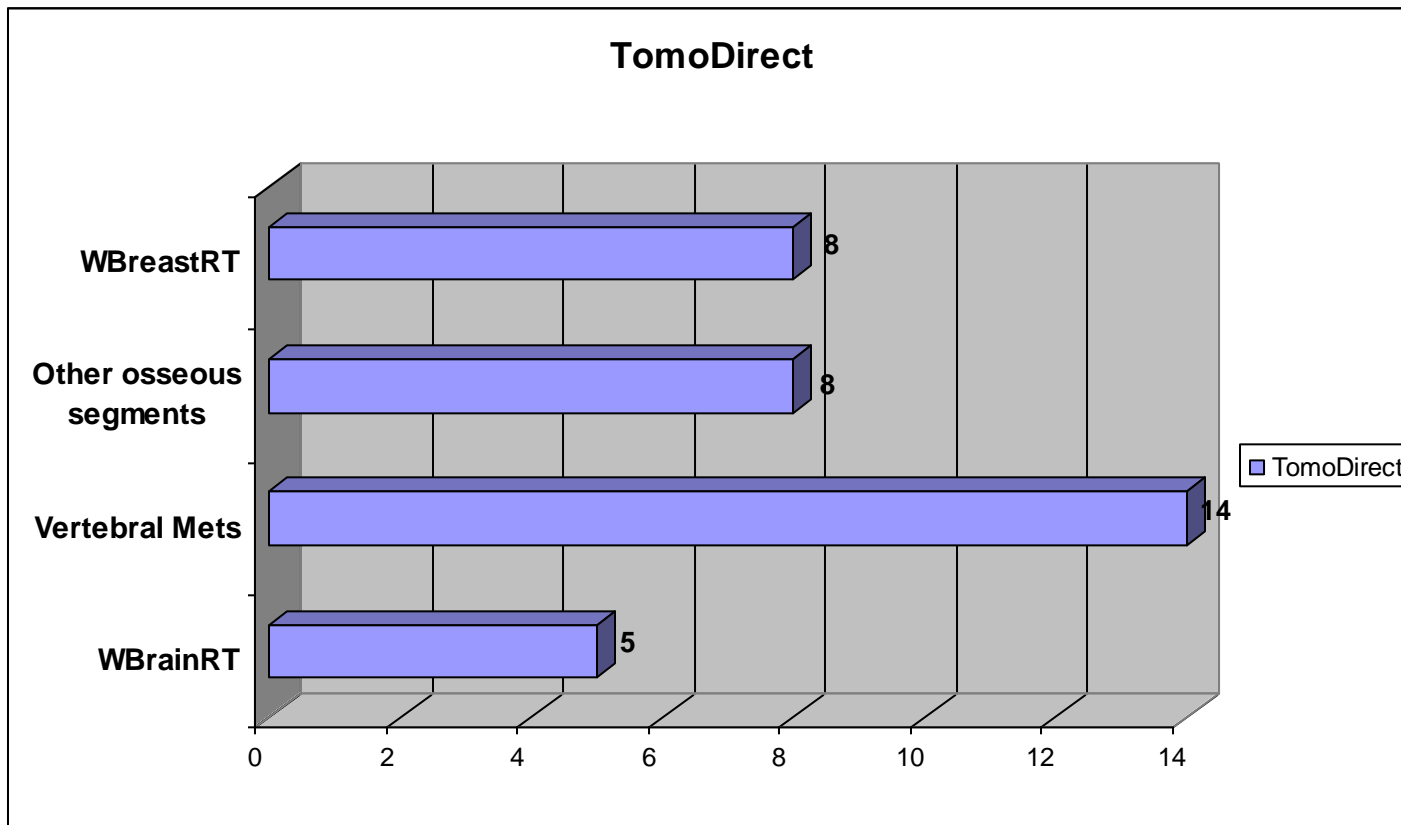


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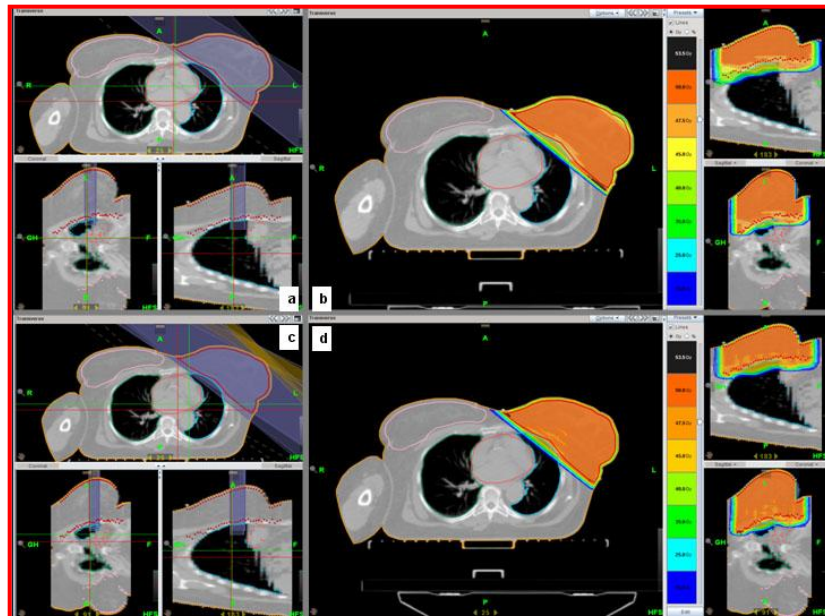
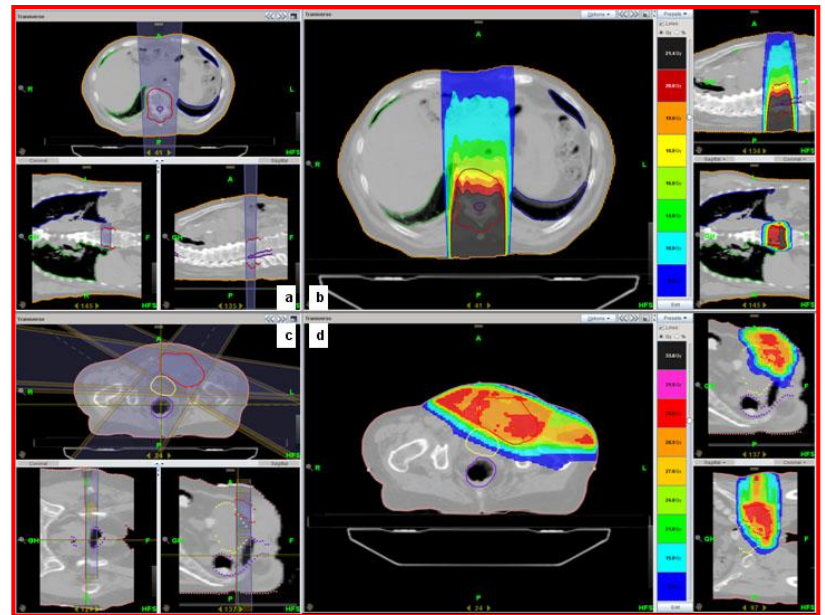
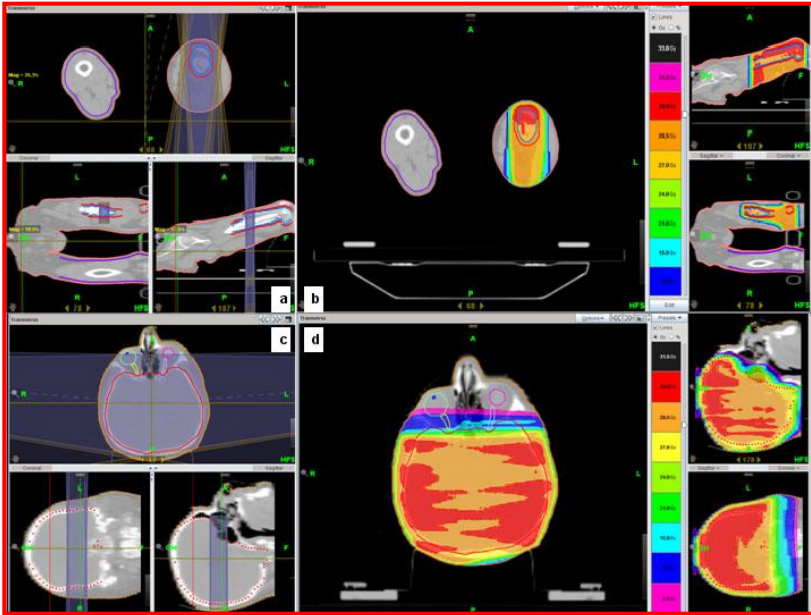


What we did with Direct so far

35 treated PTVs



Few examples





Thank you