



COLON-TC: Indicazioni e tecnica



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Presidente Nazionale SNR



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Gestione Risorse**
Società Italiana Radiologia Medica



**OMCeO
Venezia**

Ordine Provinciale
dei Medici Chirurghi
e degli Odontoiatri

**Venezia-Mestre,
21.4.2015**



1. INDICAZIONI ALL'ESAME

-A) Colonscopia incompleta

-B) Controindicazioni alla CO

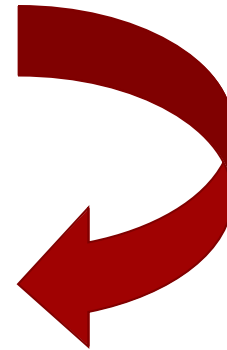


A) Colonscopia incompleta

CO incompleta : 2-10 %

cause:

1. Tumori stenosanti.
2. Diverticolosi.
3. Dolico colon
4. Spasmo (intolleranza).





Altri motivi

Valutazione dei segmenti diverticolari.

- estensione
- ispessimento parete
- interessamento extracolico



Screening di adenomi o carcinomi in pazienti che rifiutano colonscopia



B) Controindicazioni per la CO

- Pazienti che fanno uso di anticoagulanti orali
- Patologie cardio-polmonari severe
- Controindicazioni alla sedazione
- Pazienti anziani
- Particolare attenzione in caso di ernie, RCU, Chron e recenti interventi chirurgici



2. TECNICA DI ESECUZIONE

- Posizionamento paziente in **decubito laterale sinistro** a ginocchia flesse su lettino TC
- Successiva introduzione di sonda (meglio cateteri sottili, morbidi di silicone con palloncino, tipo **Foley** di piccole dimensioni, max **20 G**)

- Insufflazione... 
Aria
CO₂

“Rectal balloon catheter not significantly associated with improved distension”
Taylor SA, Radiology 2003



Aria ambiente

(vol. Totale circa **1,5 - 2 lt**)

- **mediante pompetta (tipo clisma opaco)**
- **decubito laterale sinistro** per assicurare la distensione del colon destro aiutandosi con massaggio addominale
- **L'insufflazione** deve essere regolare, prudente fino a quando il paziente inizia a riferire senso di tensione addominale distensione (poggiare una mano sull'addome del paziente mentre si gonfia).





Anidride Carbonica (vol. totale circa 2,5 - 3 lt)

Migliore, per:

Controllo della quantità iniettata

Controllo della pressione

L'anidride carbonica si riassorbe molto più agevolmente, con minor disagio per il paziente

SVANTAGGIO:

Costi (10.000 euro apparecchiatura; 15 euro kit monouso)



2 decubiti (prono e supino): i vantaggi

- **Ridistribuzione aria: migliora la distensione dei segmenti intestinali**
- **Ridistribuzione fluidi: consente completa valutazione delle pareti (peraltro già migliorata dal fecal tagging)**
- **Ridistribuzione residui fecali: consente differenziazione da eventuali polipi**
- **Migliora individuazione di polipi > 20% ($p < 0,001$):**
- **ACCURATEZZA 90-95% polipi 8-10mm**

Yee et al Radiology 2003

Gryspeerd et al Eur Radiolo 2004

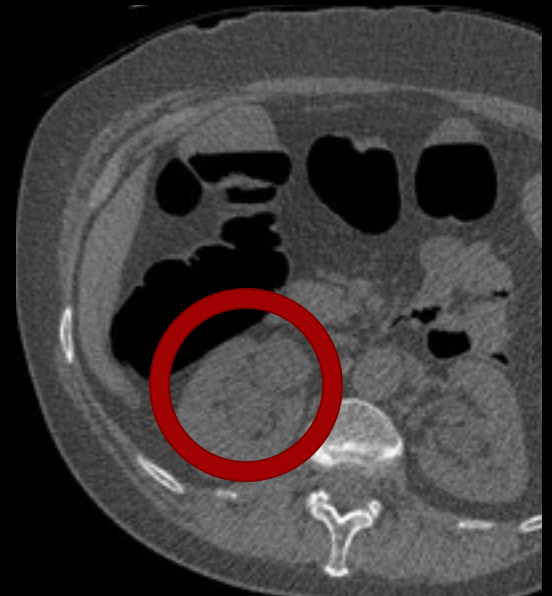
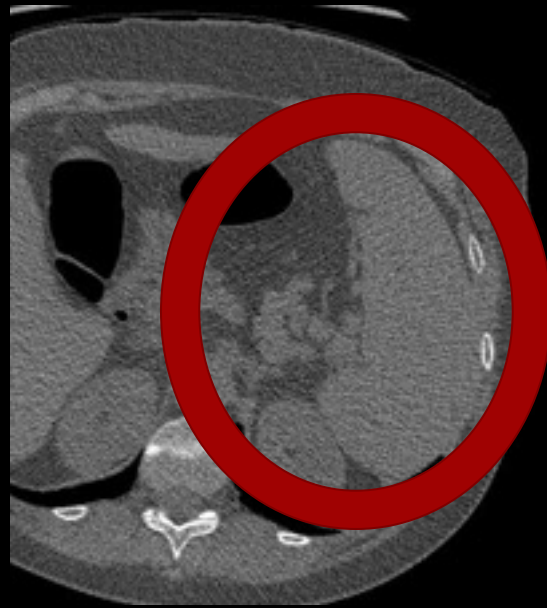


Rilievi patologici asintomatici extracolici

Frequenti, in oltre il 10% dei casi

Masse, lesioni focali epatiche, AAA, linfadenopatie

++ età compresa tra i 60 e gli 85 aa



ATTENZIONE!!!!!!!



PREPARAZIONE

- Dieta priva di fibre nei 2 gg precedenti
- La sera prima solo brodo
- Il mattino dell'esame solo caffè o the
- Ore 16 del giorno precedente: 3 buste ISOCOLAN in 3 lt di acqua fredda; bere tutto in circa 2 ore
- Ore 21: 1 flacone di GASTROGRAFIN



ISOCOLAN (PoliEtilenGlicole)

3 lt:

3-4 litri il giorno prima, 6-8 buste (1 bicchiere ogni 15 minuti).; da ore 16.00 a ore 19.00 – 20.00

- Si tratta di un prodotto lassativo iso-osmotico : impedisce gli scambi idroelettrolitici consentendo il lavaggio e la detersione del lume intestinale
- È ideale per gravi insufficienze cardiache, epatiche e renali, in pazienti con stipsi ostinata.
- **Controindicata** in stenosi note, ileo dinamico, enterocoliti acute



GASTROGRAFIN: Fecal Tagging

IMPIEGO DI SOLUZIONI BARITATE O CON MDC IDROSOLUBILE (**Gastrografin**[°], **Gastromiro**[°]) AD ALTA DILUIZIONE DA FAR BERE AL PAZIENTE NEI GIORNI PRECEDENTI O CIRCA 3 ORE PRIMA DELL'ESAME ALLO SCOPO DI OTTENERE UNA "**MARCATURA**" RADIOPACA DEI RESIDUI LIQUIDI O FECALI

P.Pickardt, Abdominal Imaging 2008



1: [Radiology](#). 2003 May;227(2):378-84.

Colorectal cancer screening with CT colonography, colonoscopy, and double-contrast barium enema examination: prospective assessment of patient perceptions and preferences.

[Gluecker TM](#), [Johnson CD](#), [Harmsen WS](#), [Offord KP](#), [Harris AM](#), [Wilson LA](#), [Ahlquist DA](#).

Department of Radiology, Mayo Clinic Rochester, 200 First Street SW, MN 55905, USA.

PURPOSE: To prospectively assess and compare perceptions of and preferences for computed tomographic (CT) colonography, colonoscopy, and double-contrast barium enema examination (DCBE) by asymptomatic patients undergoing colorectal cancer screening. **MATERIALS AND METHODS:** A total of 696 asymptomatic patients at higher-than-average risk undergoing colorectal cancer screening were consecutively recruited to undergo both CT colonography and colonoscopy (group 1), and a like group of 617 patients was separately recruited to undergo both CT colonography and DCBE (group 2). Standard bowel preparations were different between the groups undergoing colonoscopy and DCBE. Each patient completed a questionnaire that assessed preparation inconvenience and discomfort, examination discomfort, willingness to repeat examinations, and examination preference. Survey results were compared for significance by using the Wilcoxon rank sum or chi² test. **RESULTS:** The majority of patients considered the preparation to be uncomfortable (group 1, 460 of 515 [89%]; group 2, 482 of 538 [90%]) and inconvenient (group 1, 393 of 502 [78%]; group 2, 427 of 527 [81%]). Reported discomfort was similar at CT colonography and colonoscopy ($P = .63$) but was less at CT colonography than at DCBE ($P < .001$). Patients experienced significantly less discomfort than expected at both CT colonography and colonoscopy but not at DCBE. Patients' willingness to undergo frequent rescreening was significantly greater for CT colonography than for either colonoscopy or DCBE. The acceptable time interval between screenings was significantly shorter for all examinations if the bowel preparation could be avoided. Overall, patients preferred CT colonography to colonoscopy (group 1, 72.3% vs 5.1%; $P < .001$) or to DCBE (group 2, 97.0% vs 0.4%; $P < .001$). **CONCLUSION:** Patients undergoing colorectal cancer screening prefer CT colonography to both colonoscopy and DCBE. The majority of patients experience discomfort and inconvenience with cathartic bowel preparation. Copyright RSNA, 2003

PMID: 12732696 [PubMed - indexed for MEDLINE]

.....patients undergoing colorectal Cancer screening prefer CTC to both colonoscopy and DBCE.....



1: [Clin Radiol](#). 2005 Feb;60(2):207-14.

Intra-individual comparison of patient acceptability of multidetector-row CT colonography and double-contrast barium enema.

[Taylor SA](#), [Halligan S](#), [Burling D](#), [Bassett P](#), [Bartram CI](#).

Department of Intestinal Imaging, St Mark's and Northwick Park Hospitals, London, UK. csytaylor@yahoo.co.uk

AIMS: To compare the subjective acceptability of CT colonography in comparison with barium enema in older symptomatic patients, and to ascertain preferences for future colonic investigation. **MATERIALS AND METHODS:** The study population comprised 78 persons aged 60 years or over with symptoms suggestive of colorectal neoplasia, who underwent CT colonography followed the same day by barium enema. A 25-point questionnaire was administered after each procedure and an additional follow-up questionnaire a week later. Responses were compared using Wilcoxon matched pairs testing, Mann-Whitney test statistics and binomial exact testing. **RESULTS:** Participants suffered less physical discomfort during CT colonography ($p = 0.03$) and overall satisfaction was greater compared with barium enema ($p = 0.03$). On follow-up, respondents reported significantly better tolerance of CT colonography ($p = 0.002$), and were less prepared to undergo barium enema again ($p < 0.001$). Of 52 subjects expressing an opinion, all preferred CT to barium enema. **CONCLUSION:** Patient satisfaction was higher with CT colonography than barium enema. CT colonography caused significantly less physical discomfort and was overwhelmingly preferred by patients.

PMID: 15664575 [PubMed - indexed for MEDLINE]

**.....patient satisfaction was higher with CTC than DCBE
.....CTC caused significantly less physical discomfort
and was overwhelmingly preferred by patients.....**



1: [Eur J Radiol](#). 2006 Dec 9; [Epub ahead of print]

Double contrast barium enema: Technique, indications, results and limitations of a conventional imaging methodology in the MDCT virtual endoscopy era.

[Rollandi GA](#), [Biscaldi E](#), [Decicco E](#).

Department of Radiology, "Duchesse of Galliera" Hospital, Via Mura delle Cappuccine 14, 16128 Genoa, Italy.

The double contrast barium enema of the colon continues to be a diffused conventional radiological technique and allows for the diagnosis of neoplastic and inflammatory pathology. After the '70s, a massive initiative is undertaken to simplify, perfect and encode the method of the double contrast barium enema: Altaras from Germany, Miller from USA and Cittadini from Italy are responsible for the perfection of this technique in the last 30 years. The tailored patient preparation, a perfect technique of execution and a precise radiological documentation are essentials steps to obtain a reliable examination. The main limit of double contrast enema is that it considers the pathology only from the mucosal surface. In neoplastic pathology evaluation the main limit is the "T" parameter staging, but more limited are the "N" and "M" parameters evaluation. Today the double contrast technique continues to be a refined, sensitive and specific diagnostic method, moreover, diagnostic results cannot compete with the new CT multislice techniques (CT-enteroclysis and virtual colonoscopy) which can examine both the lumen and the wall of the colon. The double contrast is a cheap and simple examination but in the next future is predictably a progressive substitution of conventional radiology from new multislice techniques, because the cross sectional imaging is more frequently able to detect causes of the symptoms whether resulting both from colonic or non colonic origin.

PMID: 17161931 [PubMed - as supplied by publisher]

“.....the main limit of DCBE is that it considers the pathology only from the mucosal surface.....”

“...diagnostic result cannot compete with the new ct multislice techniques (CT enteroclysis and VC) which can examine both the lumen and the wall of the colon....”



1: [Clin Gastroenterol Hepatol](#). 2004 Apr;2(4):314-21.

Comparison of the relative sensitivity of CT colonography and double-contrast barium enema for screen detection of colorectal polyps.

[Johnson CD](#), [MacCarty RL](#), [Welch TJ](#), [Wilson LA](#), [Harmsen WS](#), [Ilstrup DM](#), [Ahlquist DA](#).

Department of Radiology, Mayo Clinic Rochester, MN 55905, USA.

CT colonography detected significantly more polyps than **DCBE**:

81% vs 45% for polyps > 10 mm

72% vs 44% for polyps 6-9 mm



Aspetti dosimetrici

- C.O.d.c 3/ 7 mSv.

- Colon-TC M 4.7/5.0 mSv.
F 6.7/7.8 mSv.



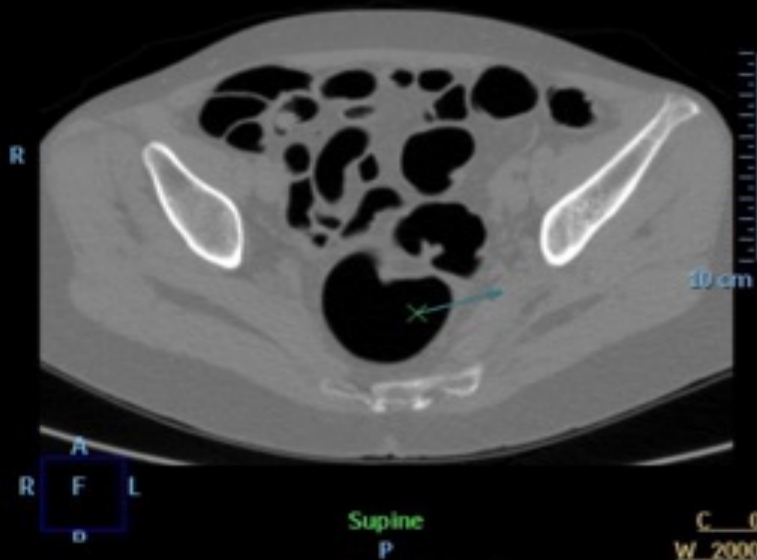
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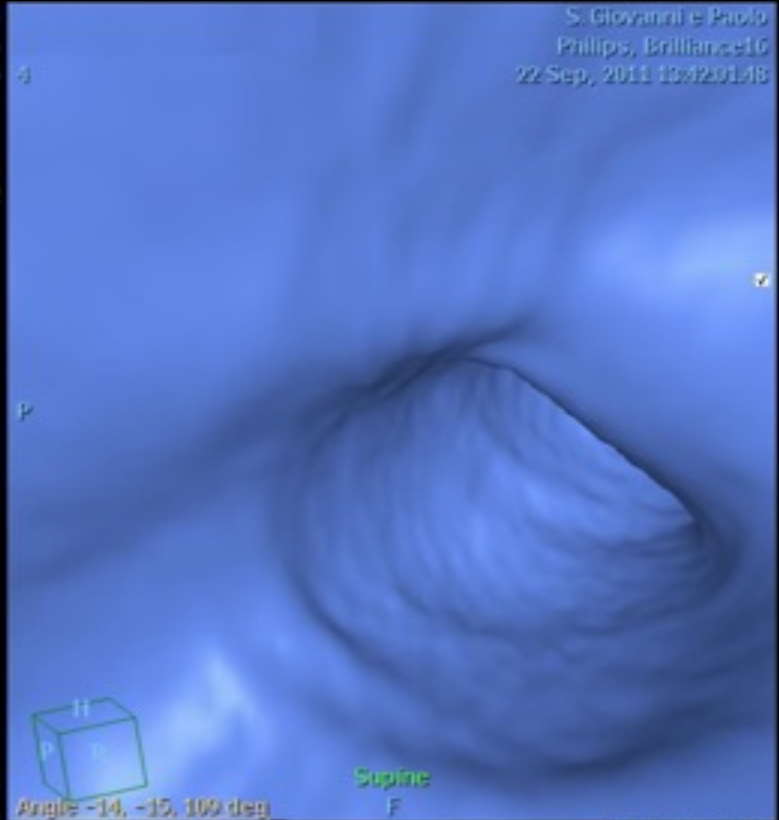


14214 F/62Y
4-230*
-360.1 mm

S. Giovanni e Paolo
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22 Sep, 2011 13:42:11.65
120 kV
FOV 300.0 mm
SW 2.00 mm
Z 1.00



S. Giovanni e Paolo
Philips, Brilliance16
22 Sep, 2011 13:42:01.48



14214 F/62Y
4

S. Giovanni e Paolo
Philips, Brilliance16
22 Sep, 2011 13:42:08.85
SW 0.59 mm
Z 1.00



14214 F/62Y
4

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Z 1.00



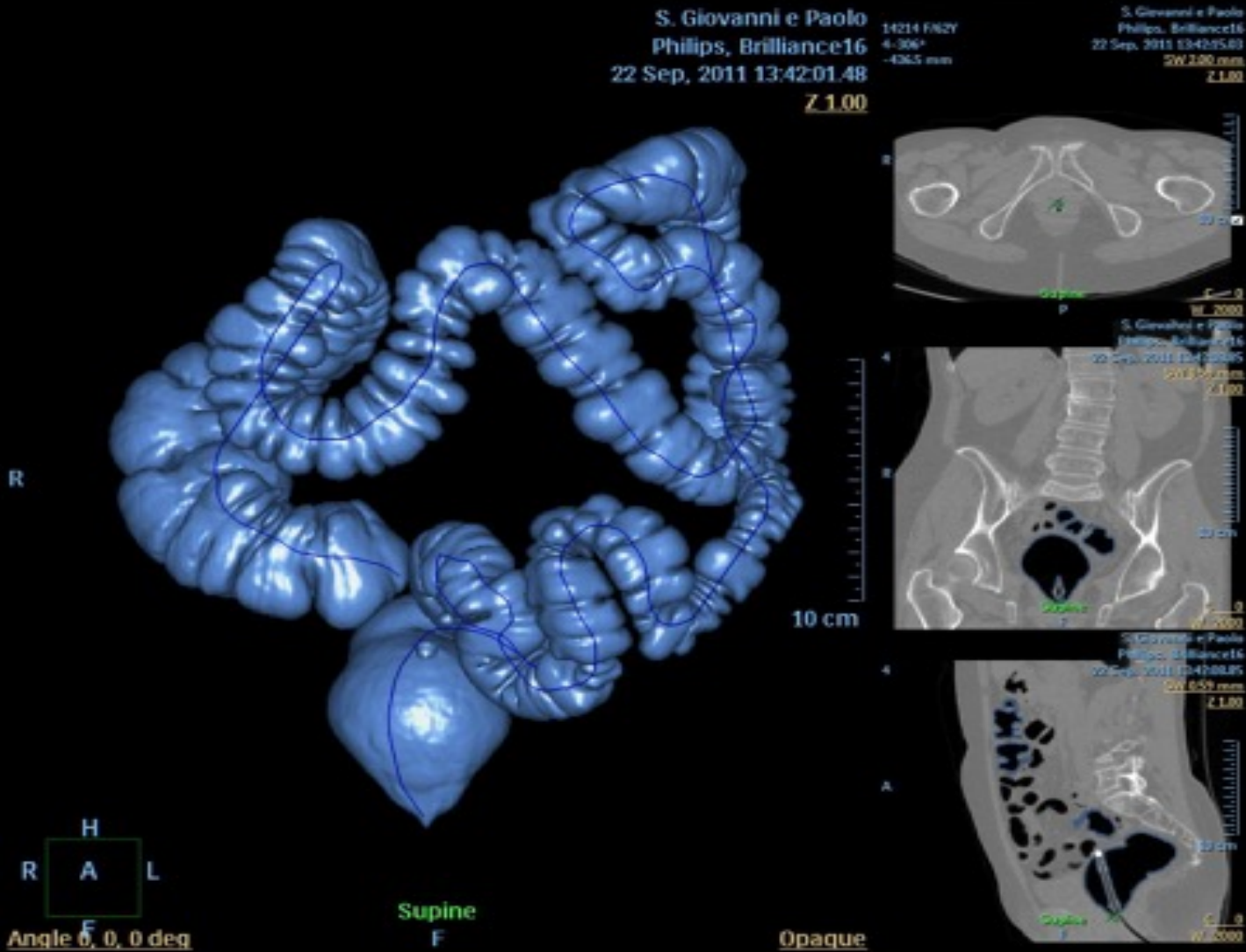
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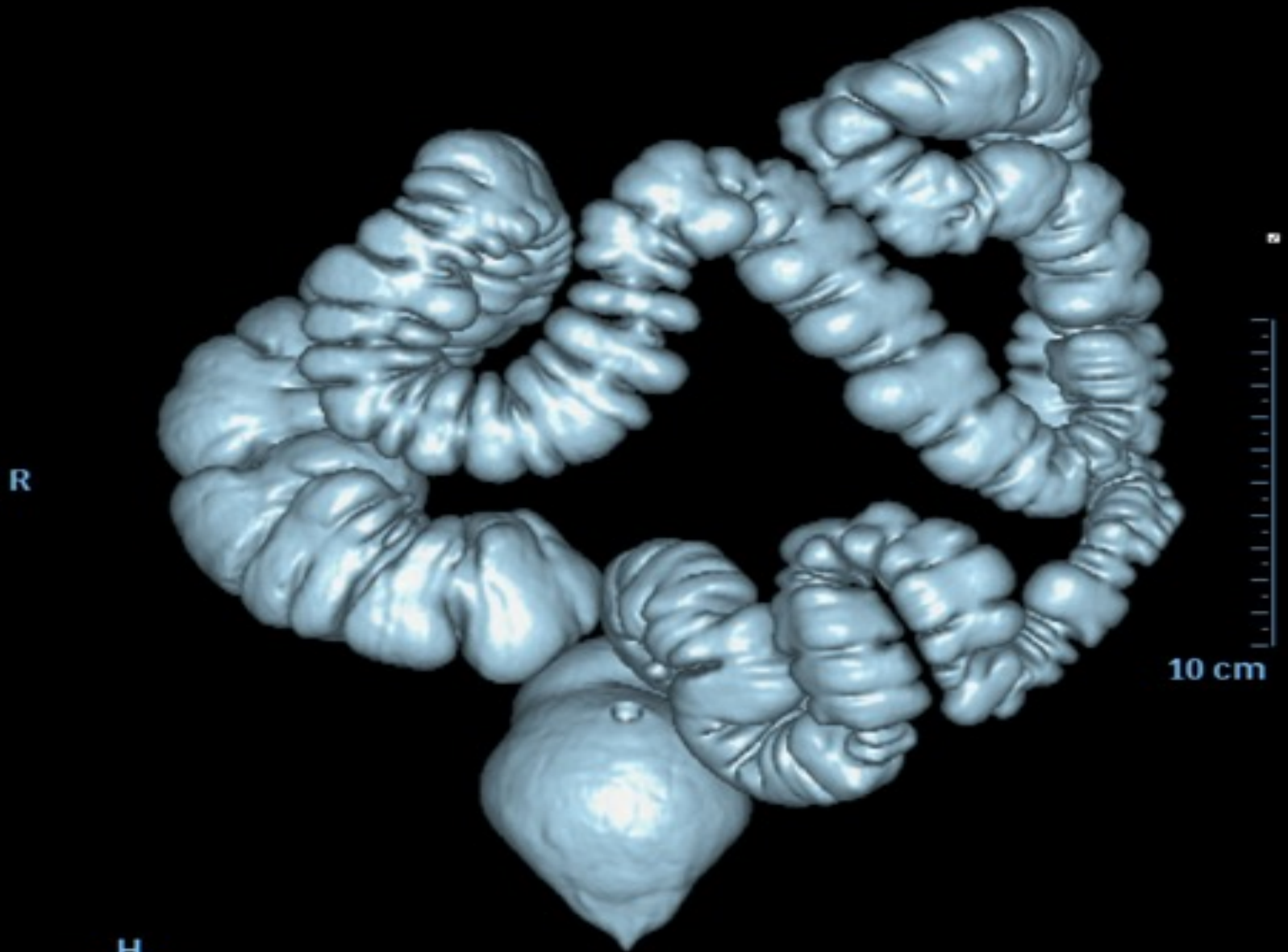
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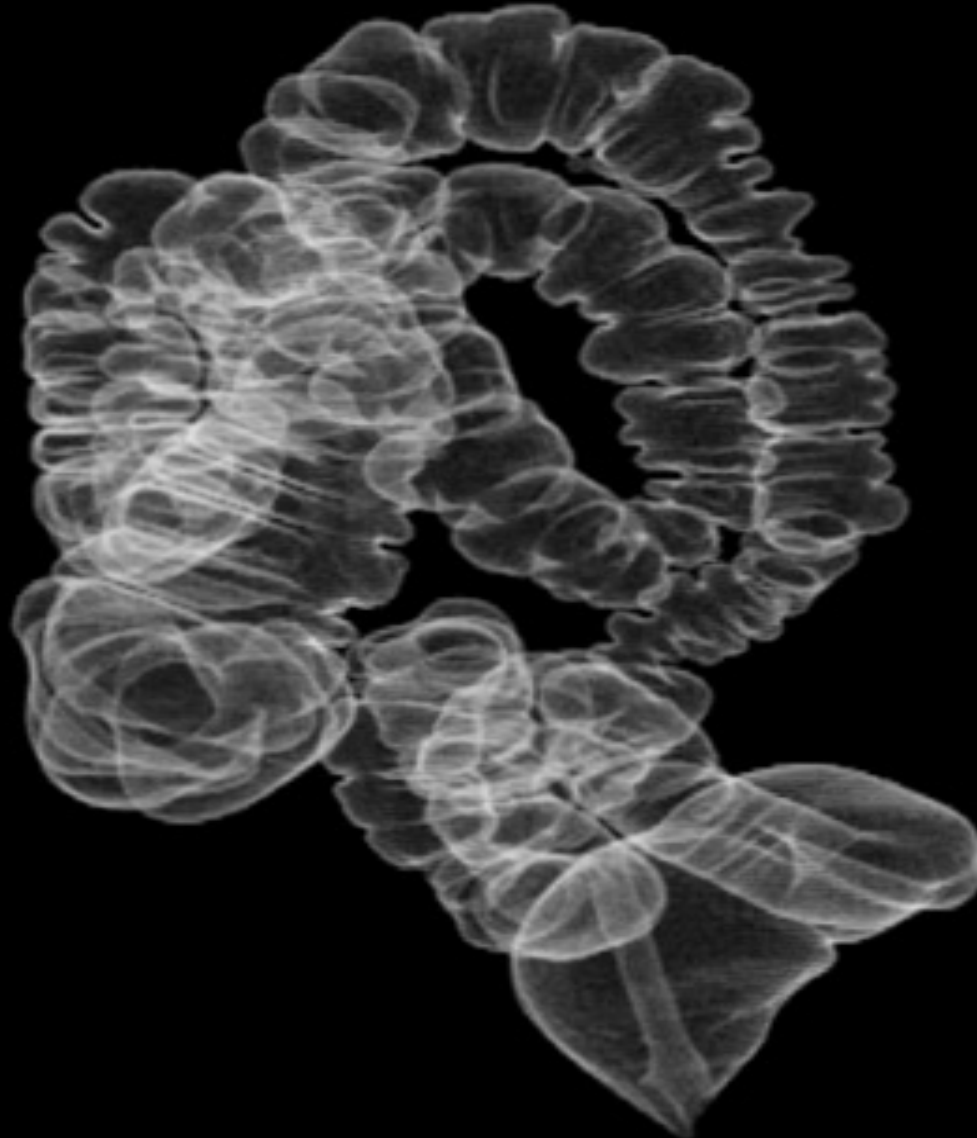




Ricostruzioni MPR e 3D

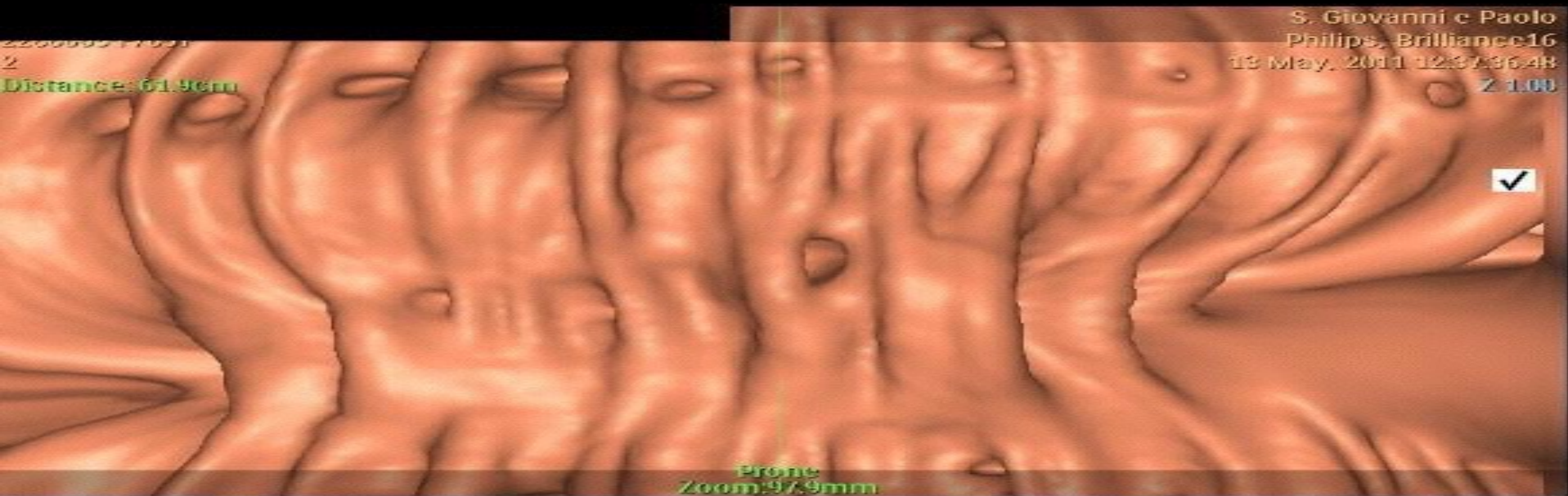






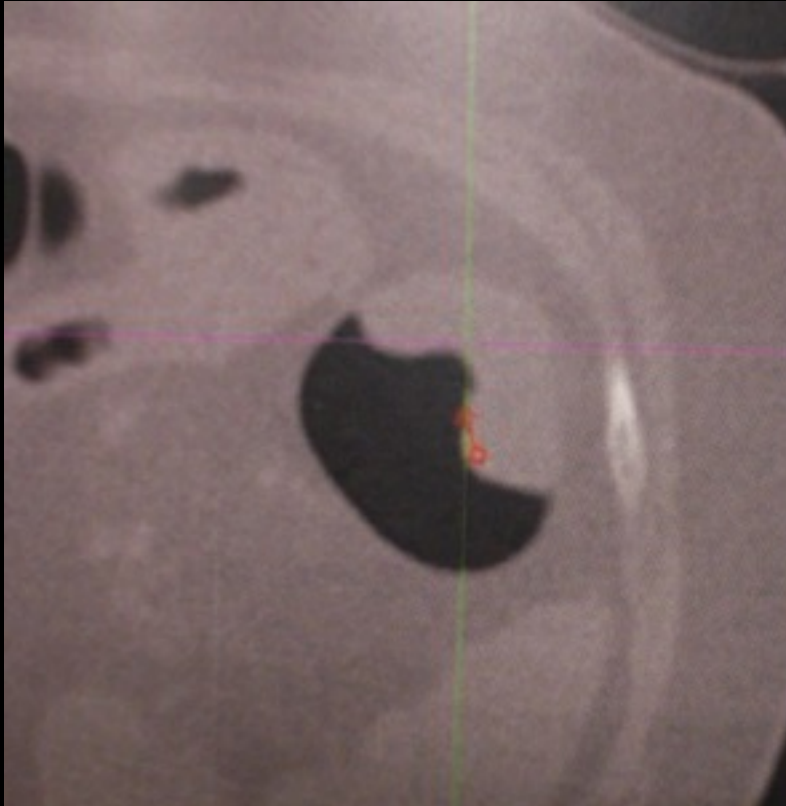
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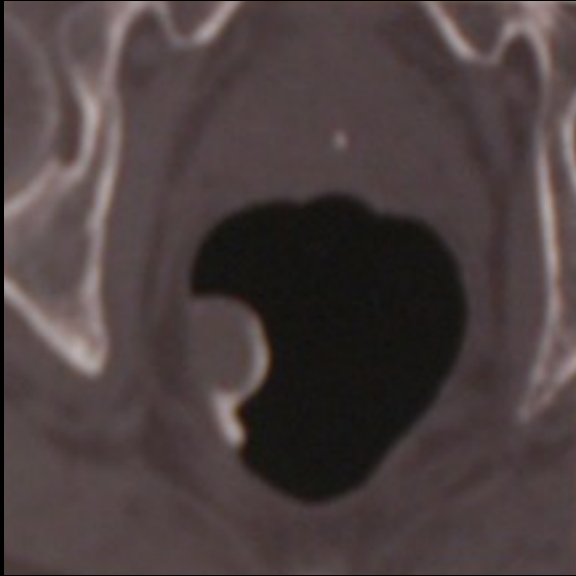
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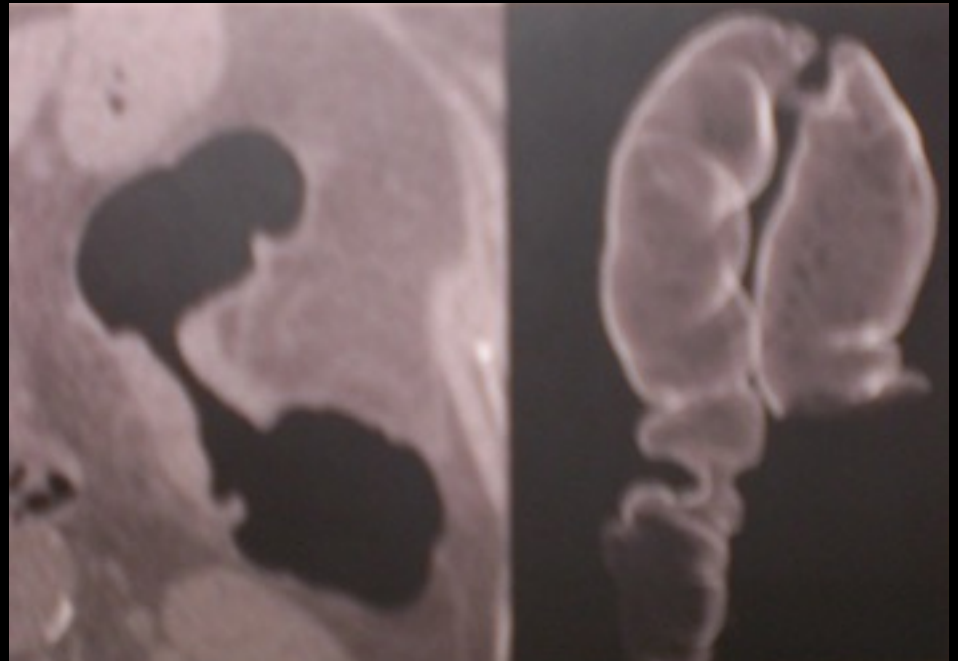
SL:
ST:
GT:
CM:

W: 00255
C: 00127











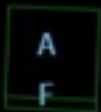
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No: 1
x 1.15

1



LA NOSTRA CASISTICA

2010-2015: 1024 pazienti
Attualmente: 5 pazienti/sett



SL:
ST:
GT:
CM: CONTRAST

Supine
F

W: 00255
C: 00127

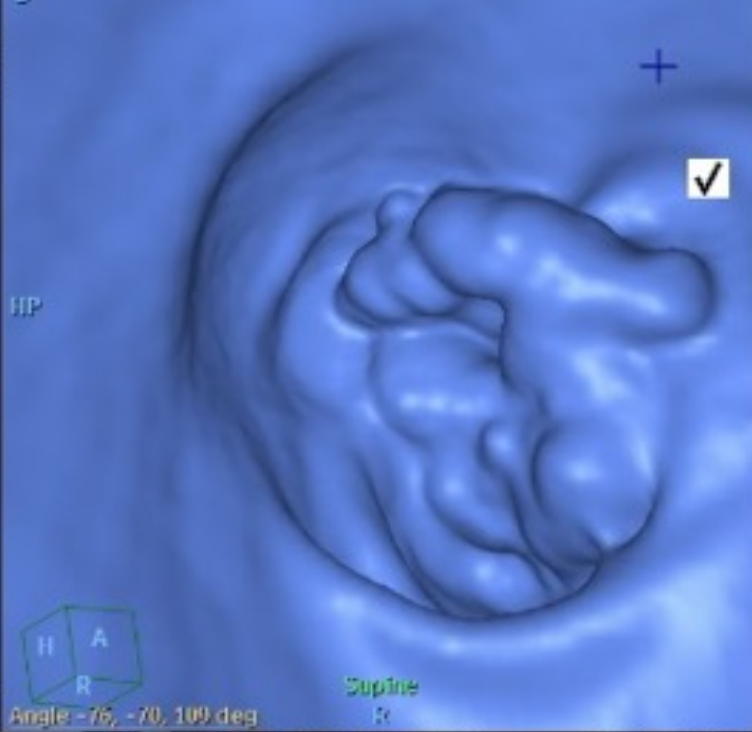


152993 M/62Y
4 99° MDC
-121.8 mm

Philips, Brilliance16
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120 kV
FOV 334.0 mm
SW 2.00 mm
Z 1.00

152993 M/62Y
4 MDC
C

Philips, Brilliance16
26 Aug, 2011 12:55:07.48



A
R F L
P

H A
R

Supine

Supine

PAGLIARA GIUSEPPE
152993 M/62Y
4 MDC
C

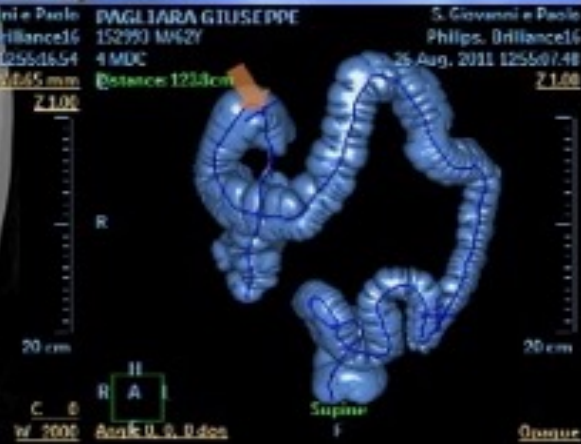
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4 MDC
SW 0.65 mm
Z 1.00

PAGLIARA GIUSEPPE
152993 M/62Y
4 MDC
C

S. Giovanni e Paolo
Philips, Brilliance16
26 Aug, 2011 12:55:16.54
4 MDC
SW 0.65 mm
Z 1.00

PAGLIARA GIUSEPPE
152993 M/62Y
4 MDC
C

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4 MDC
Distance 123.3cm
Z 1.00



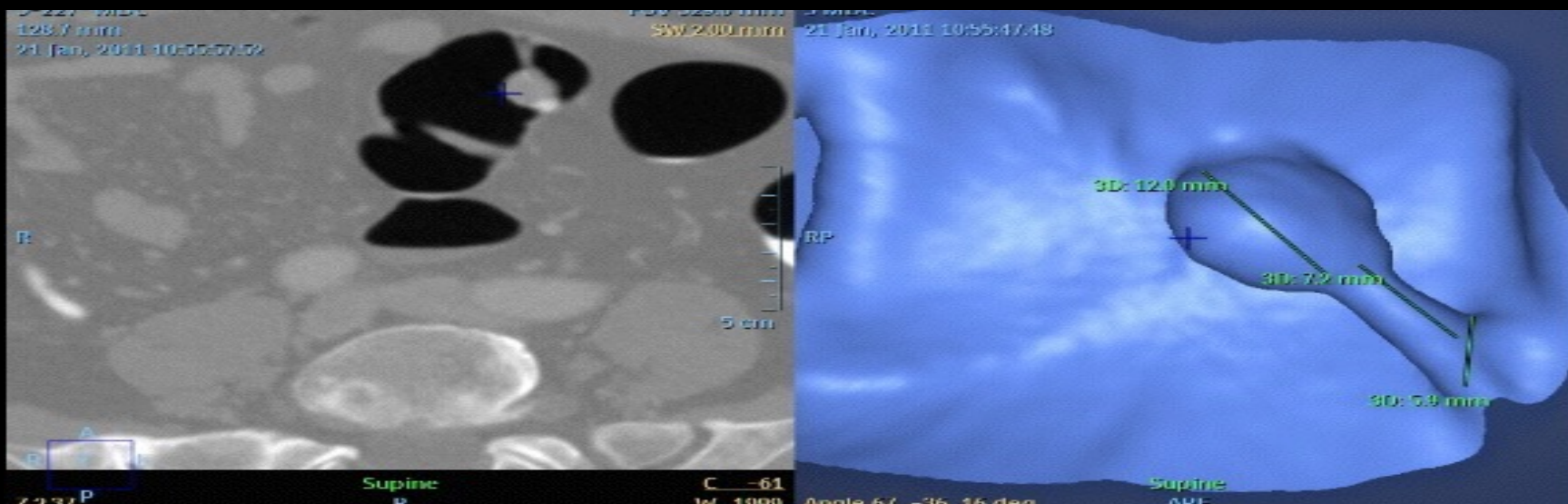
A
H L P
F

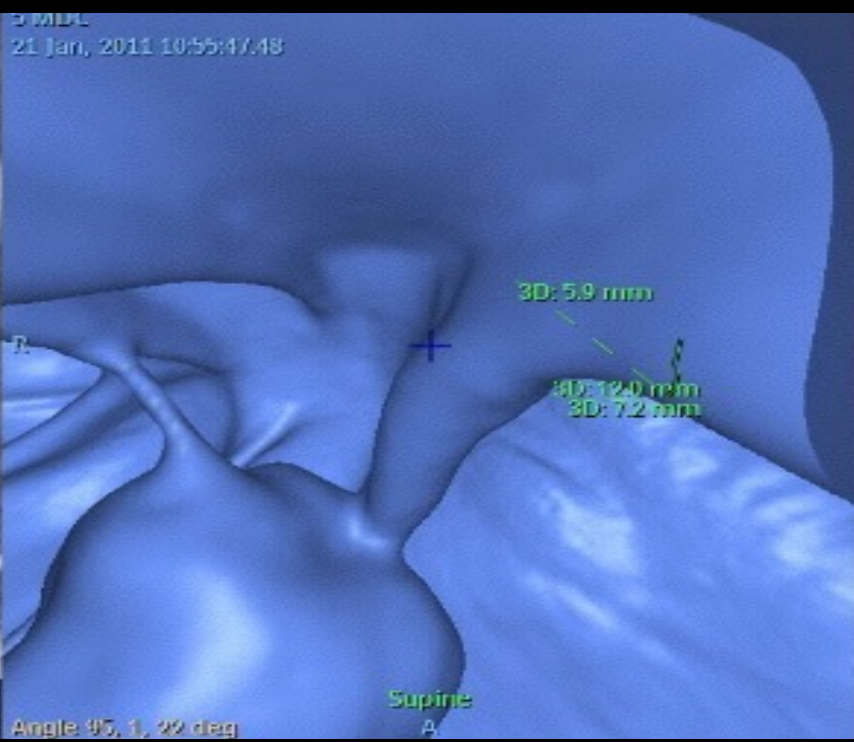
H A
R F

H A
R F

H A
R F

Onquer



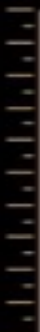




DoB: 06/08/1947
Date:
Time:
No.: 2
x 1.15

2

RP



10 cm



Prone
F

SL:
ST:
GT:
CM:

W: 00255
C: 00127







Grazie per l'attenzione !!!

