

Intralase e cheratocono :
nostra esperienza e follow up a 16 mesi

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Nuova Casa di Cura Villa Rizzo - Siracusa

La nostra esperienza

Intralase FS60



INTACS



Intralase FS 60

CARATTERISTICHE TECNICHE

Tipo di Laser	Cristallo di Neodimio
Diametro Spot	< 3µm
Frequenza di lavoro	60 Khz
Ampiezza dell'impulso	600-800 Femtosecond
Lunghezza d'onda	1053 nm

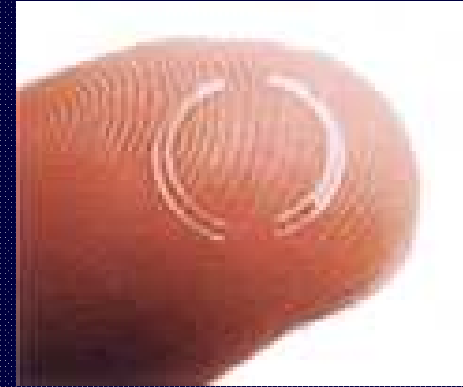
- Nel sistema Internazionale per le unità di misura il prefisso “Femto” indica 10^{-15} parti dell'unità di misura = 1 milionesimo di miliardesimo;
- 1 Femtosecondo rappresenta il tempo necessario ad un elettrone per passare da un atomo all'altro.

Intralase FS 60

APPLICAZIONI DEL LASER A FEMTOSECONDI

- Creazione flap corneali – 90/400 micron
- *Creazione tunnel corneali – Intacs, Kerarings*
- ALK – Keratoplastica Lamellare Anteriore
- PK – Keratoplastica Perforante
- Incisioni Arcuate

INTACS



- due mezzelune molto piccole e sottili di PMMA
- **2004** approvazione FDA per il trattamento KC

- **INTACS classiche** -- cono paracentrale



-- comp. Cil > Sf

- **INTACS SK**

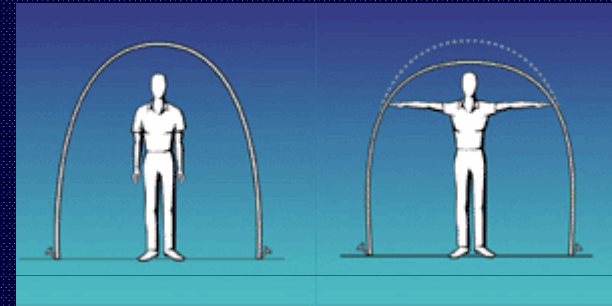


-- cono centrale

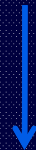
-- comp. Sf > Cil

FUNZIONE INTACS

- Consentire la centratura del cono
- Rimodellare la superficie corneale



Per maggiore stabilità del risultato



Cross-linking dopo un mese



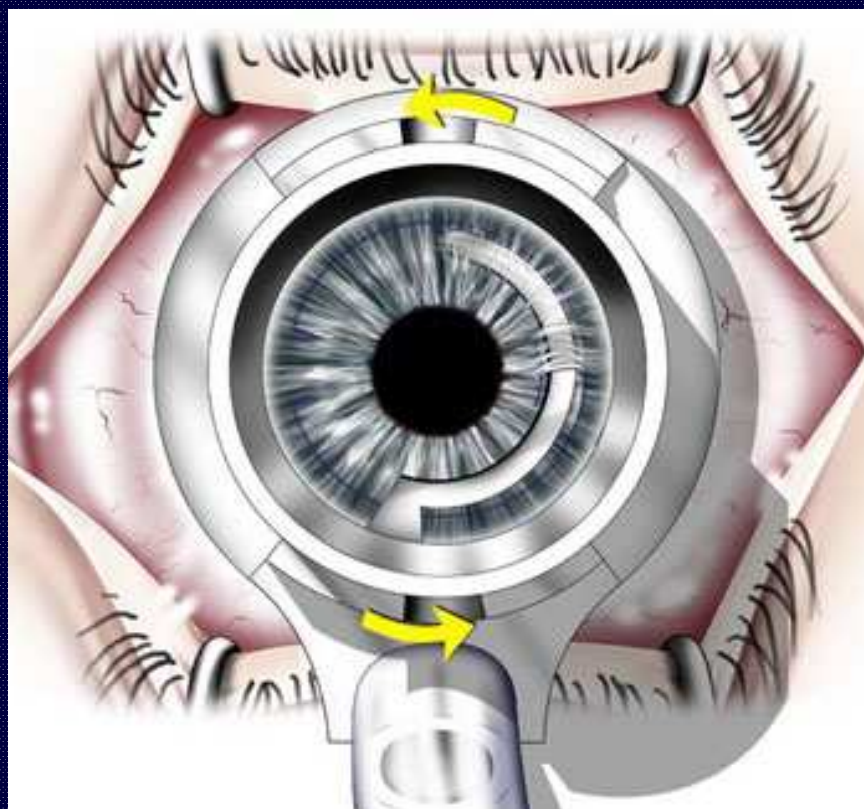
INDICAZIONI AL TRATTAMENTO

- Cheratocono in evoluzione
- Età > 18 anni
- Intolleranza LAC
- Assenza di leucomi centrali o paracentrali
- Assenza di fissurazioni endoteliali
- K medio < 55 D
- Spessore corneale > 320 μm

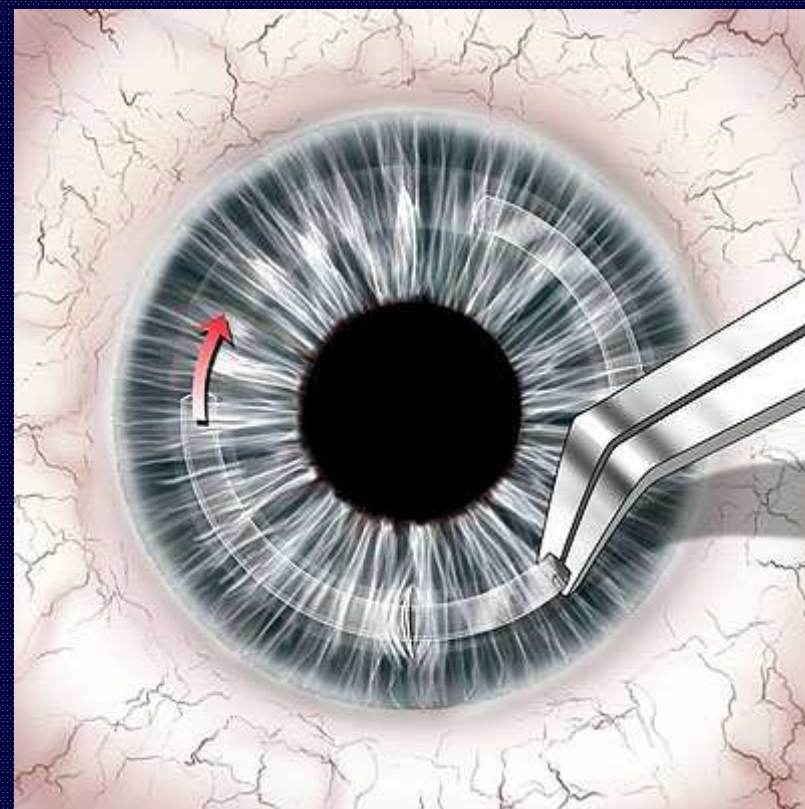


Tecnica chirurgica tradizionale

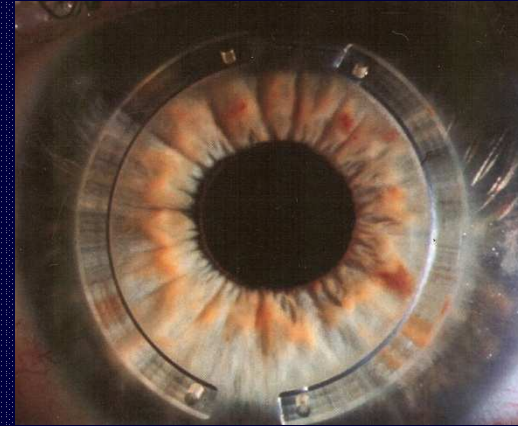
Creazione del tunnel stromale mediante dissetto anti-orario con bulbo mantenuto in suzione.



Manovra di inserimento dell'anello all'interno del tunnel mediante apposita pinza

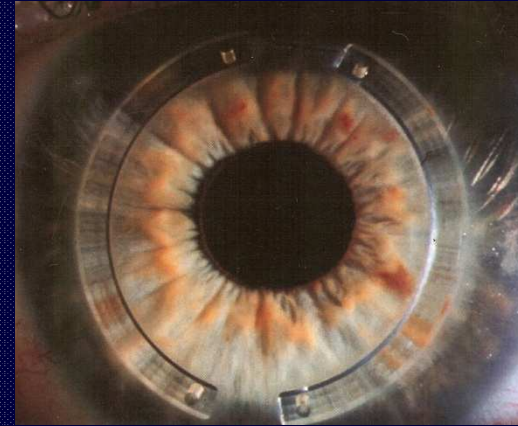


Vantaggi dell'Intralase nell'impianto di Intacs



- Minor traumatismo nella creazione del tunnel intrastromale:
 - minor incidenza di complicanze post-operatorie (haze corneale periferico, depositi ferrosi, opacità gelatinose, ecc.)

Vantaggi dell'Intralase nell'impianto di Intacs



- Maggior certezza nel posizionamento dell'anellino alla profondità intrastromale desiderata:
 - minor incidenza di complicanze intraoperatorie (perforazione in CA) e postoperatorie (ulcere corneali ed estrusione della protesi)

Software per l'inserimento di anellini intrastromali

The screenshot shows a software window titled "PATIENT DATA ENTRY" with a "Current User:" label in the top right corner. The interface is divided into several sections:

- Patient Information:** Fields for "Last Name", "First Name", and "DOB" (with a "--" value). There are also buttons for "OU", "OD", and "OS", and a "Treating Doctor" field.
- Procedure Type:** Three buttons labeled "FLAP", "RING" (which is highlighted in light blue), and "KERATO PLASTY".
- Parameters:** A list of adjustable parameters, each with a numerical value and up/down arrow controls:
 - DEPTH IN CORNEA: 400
 - INNER DIAMETER: 5.0
 - OUTER DIAMETER: 5.7
 - ENTRY CUT LENGTH: 1.40
 - ENTRY CUT THICKNESS: 1
 - INCISION AXIS: 90
 - RING ENERGY: 1.50
 - ENTRY CUT ENERGY: 1.50
- Estimated Time:** A section labeled "ESTIMATED PROCEDURE TIME [sec]" with a blue box containing the number "13".
- Navigation:** Three buttons at the bottom: "Options...", "Proceed" (in green), and "Cancel".

Il software consente di effettuare incisioni precise creando geometrie di taglio personalizzate

Tecnica di esecuzione



La nostra esperienza

- DA NOVEMBRE 2008 A MARZO 2010 (16 MESI)
- 30 occhi di 18 pazienti
- 13 M 5 F
- Età 18 – 38 aa (media 29 aa)
- FOLLOW UP MEDIO 10 MESI



CASO CLINICO : C.F. 27 ANNI M

OCULUS - PENTACAM

Cognome: Cavallaro
 Nome: Fabio Francesco
 ID:
 Data di Nascita: 24/01/1982 Occhio: Destro
 Data Esame: 04/11/2008 Ora: 19:44:47
 Exam Info:

Cornea Front

Rh: 7.88 mm K1: 42.8 D
 Rv: 6.78 mm K2: 49.8 D
 Rm: 7.33 mm Km: 46.0 D

QS: OK Asse: 17.7° Astig: 6.9 D
 Q-val: (8mm) -1.62 Rper: 8.57 mm Rmin: 6.12 mm

Cornea Back

Rh: 6.32 mm K1: -6.3 D
 Rv: 5.02 mm K2: -8.0 D
 Rm: 5.67 mm Km: -7.1 D

QS: Model! Asse: 14.5° Astig: 1.6 D
 Q-val: (8mm) -1.66 Rper: 7.32 mm Rmin: 4.32 mm

Pupil Center: + Pachy: x[mm] y[mm]
 + 496 μm -0.33 -0.10

Pachy Apex: • 504 μm 0.00 0.00

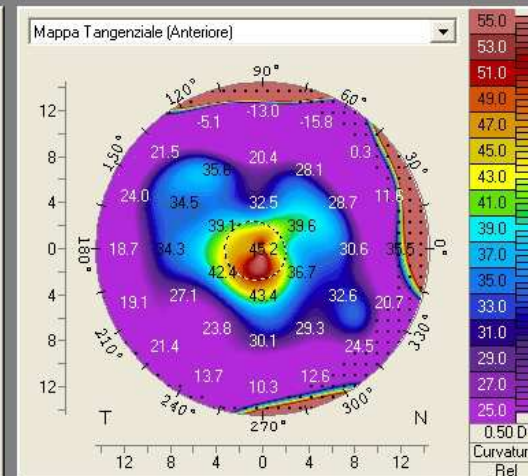
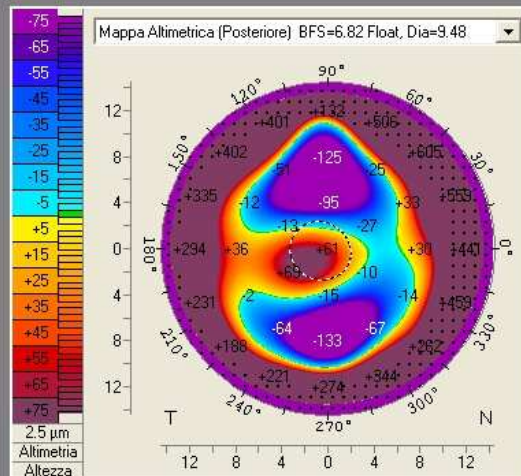
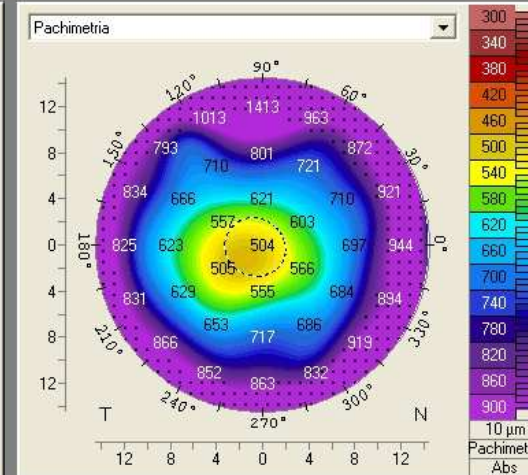
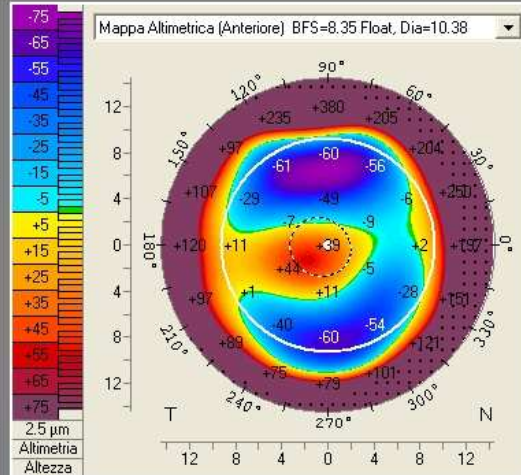
Thinnest Locat.: ○ 487 μm -0.81 -0.56

Cornea Volume: 58.3 mm³ KPD: +2.2 D

Chamber Volume: 236 mm³ Angle: 46.2°

A. C. Depth (Int.): 3.63 mm Pupil Dia: 2.58 mm

Enter IOP IOP(cor) Lens Th:

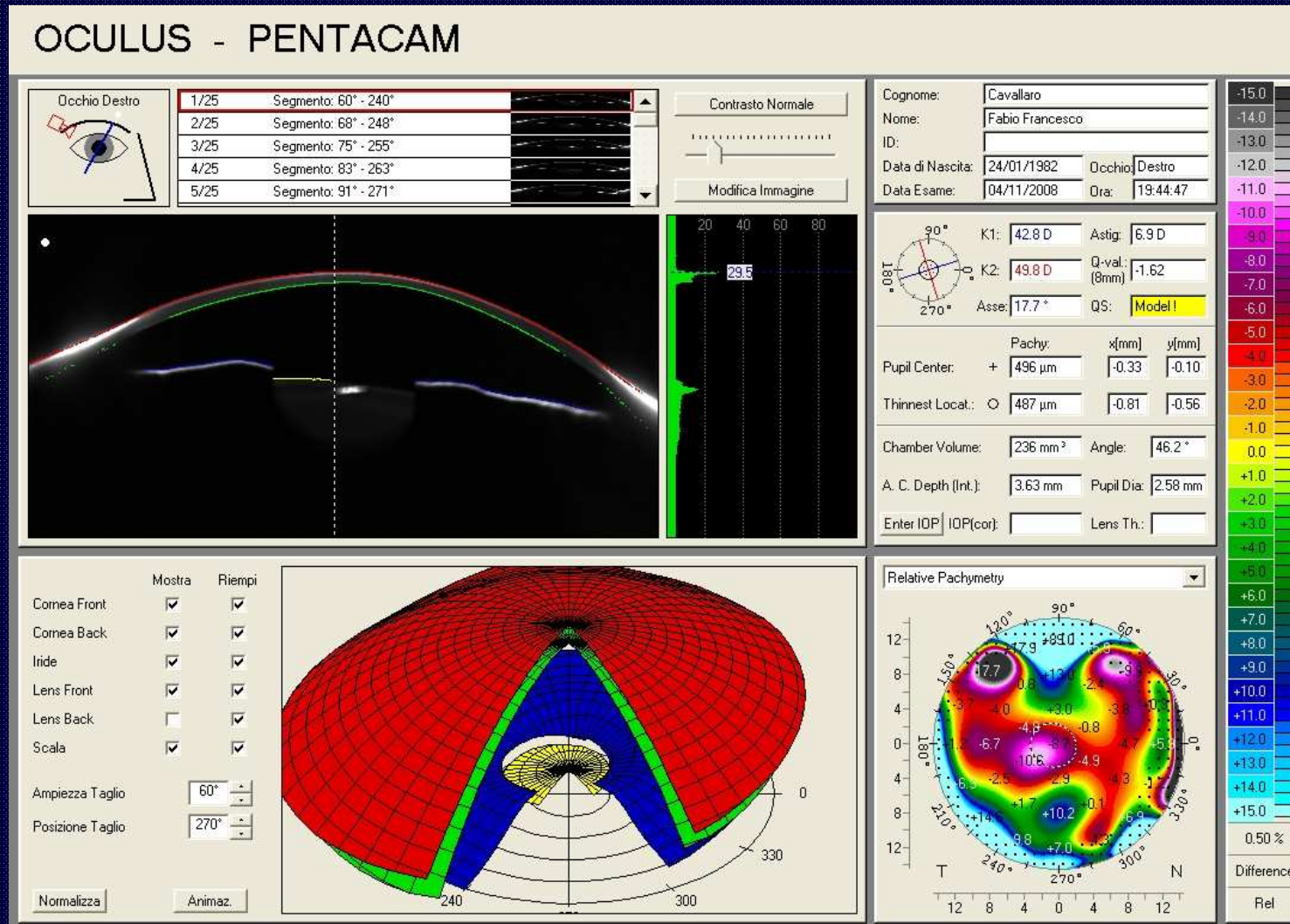


PRE

K1=42.8D

K2=49.8D

CASO CLINICO : C.F. 27 ANNI M

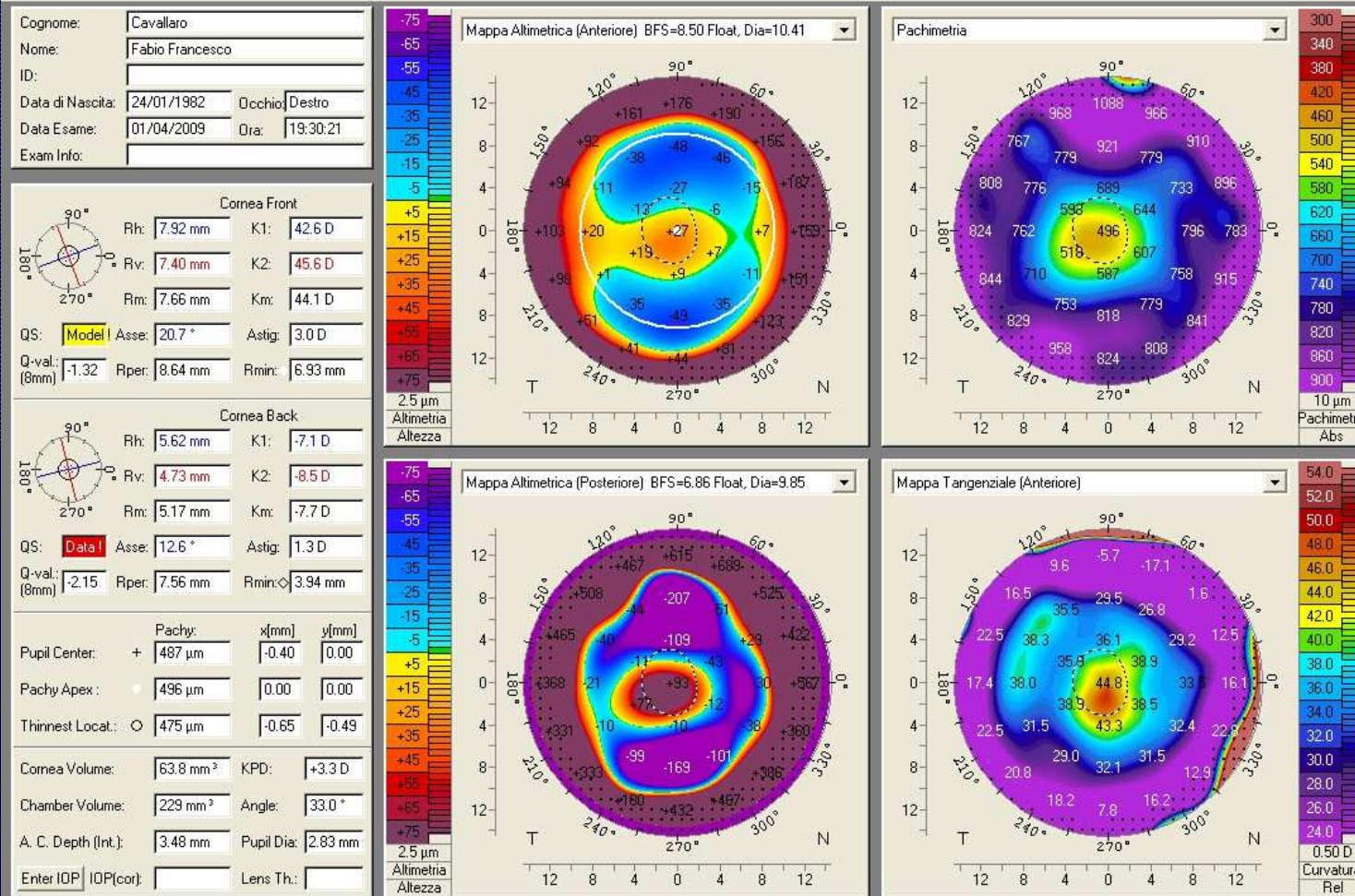


PRE

OD: sf -3 cyl -5 α20
UCVA 1/50 BCVA 3/10

CASO CLINICO : C.F. 27 ANNI M

OCULUS - PENTACAM

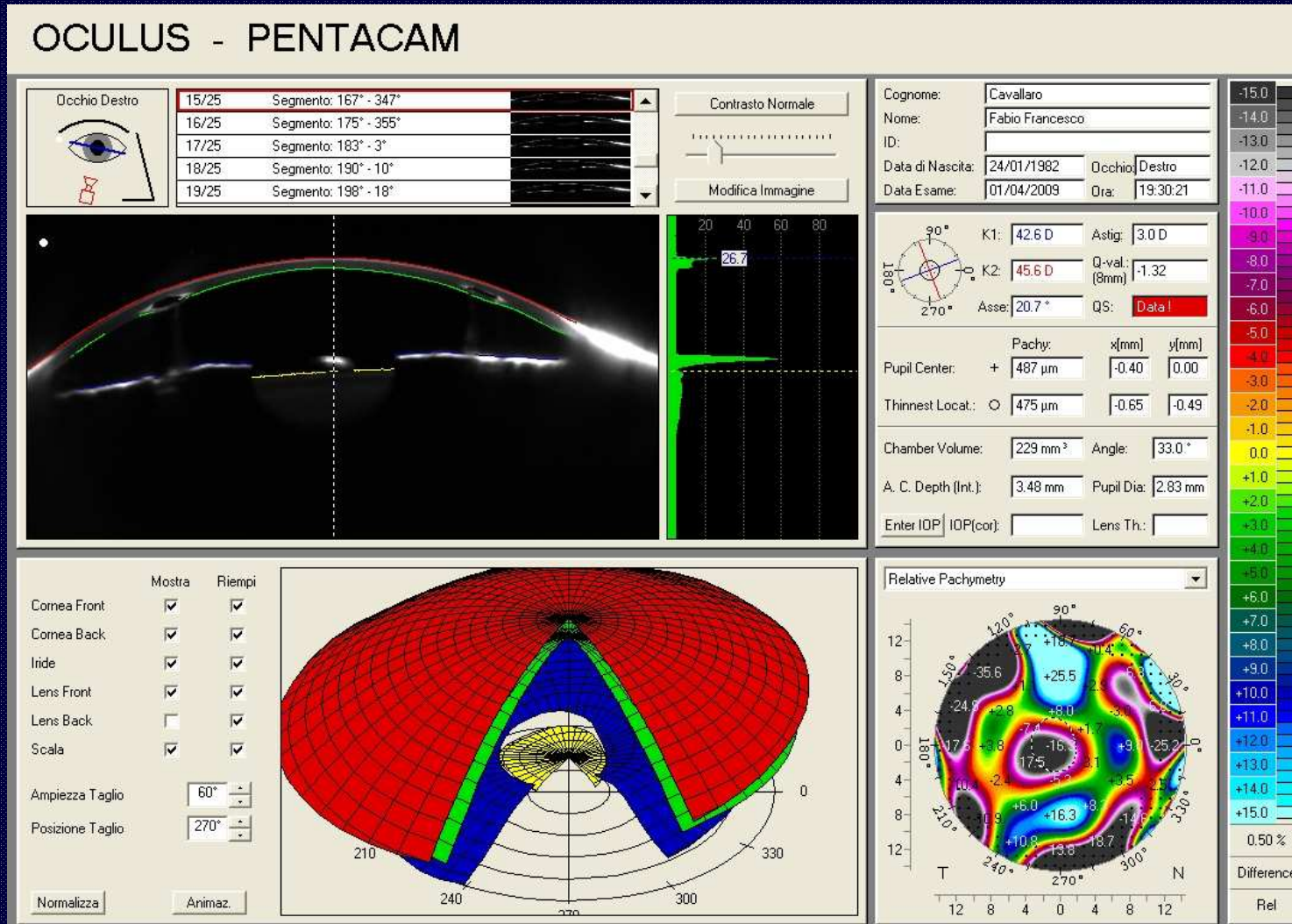


POST 40gg

K1=42.6D

K2=45.6D

CASO CLINICO : C.F. 27 ANNI M



POST 40gg

OD: cyl -2,25 α20
 UCVA 3/10 BCVA 8/10

CASO CLINICO : C.F. 27 ANNI M

OCULUS - PENTACAM

Cognome: Cavallaro
 Nome: Fabio Francesco
 ID:
 Data di Nascita: 24/01/1982 Occhio: Destro
 Data Esame: 11/03/2010 Ora: 19:08:44
 Exam Info:

Cornea Front

Rh: 7.77 mm K1: 43.4 D
 Rv: 6.83 mm K2: 49.4 D
 Rm: 7.30 mm Km: 46.2 D

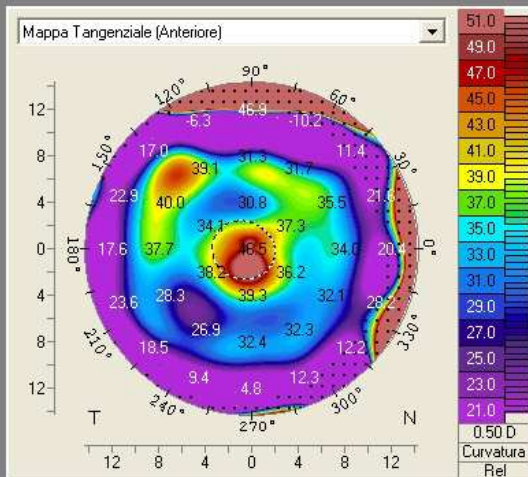
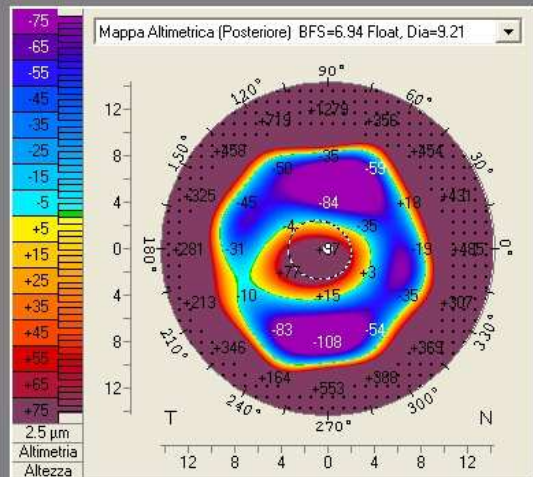
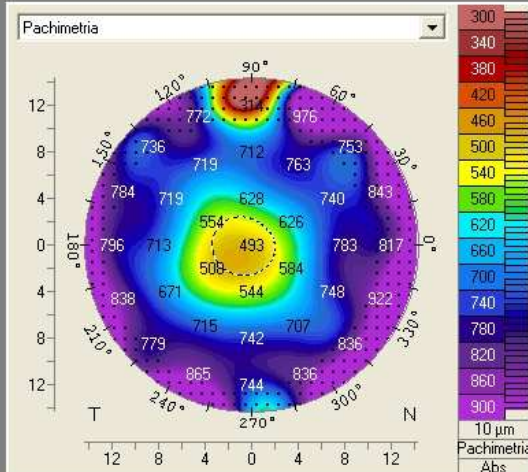
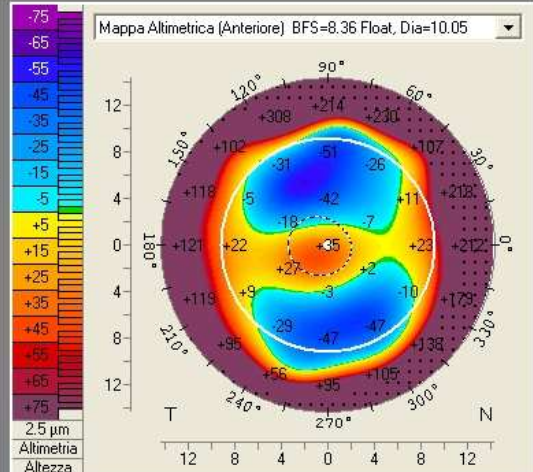
QS: OK Asse: (flt.) 16.6° Astig: 6.0 D
 Q-val: (8mm) -1.94 Rper: 8.67 mm Rmin: 5.93 mm

Cornea Back

Rh: 5.69 mm K1: -7.0 D
 Rv: 5.09 mm K2: -7.9 D
 Rm: 5.39 mm Km: -7.4 D

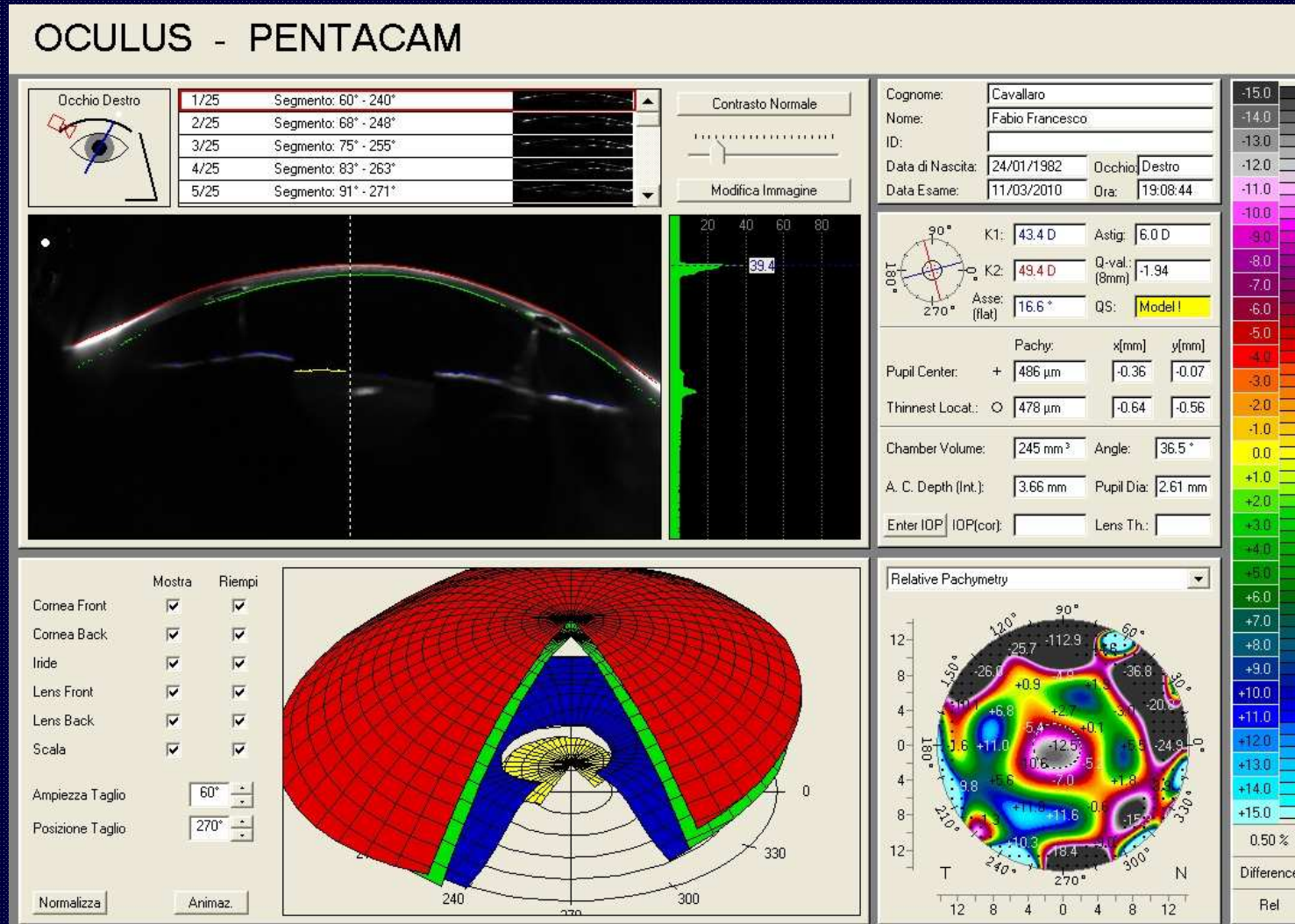
QS: Model Asse: (flt.) 8.9° Astig: 0.8 D
 Q-val: (8mm) -2.64 Rper: 7.75 mm Rmin: 4.10 mm

	Pachy:	x[mm]	y[mm]
Pupil Center:	+ 486 μm	-0.36	-0.07
Pachy Apex:	• 493 μm	0.00	0.00
Thinnest Locat.:	○ 478 μm	-0.64	-0.56
K Max. (Front):	• 56.9 D	+0.16	-0.72
Cornea Volume:	59.6 mm ³	KPD:	+2.5 D
Chamber Volume:	245 mm ³	Angle:	36.5°
A. C. Depth (Int.):	3.66 mm	Pupil Dia:	2.61 mm
Enter IOP	IOP(cor)	Lens Th.:	



POST 16 mesi K1=43.4 D K2=46.4D

CASO CLINICO : C.F. 27 ANNI M



POST 16 mesi OD: cyl -3,75 α20
 UCVA 3/10 BCVA 8/10

CASO CLINICO : A.A. 38 ANNI F

OCULUS - PENTACAM

Cognome:
 Nome:
 ID:
 Data di Nascita: Occhio:
 Data Esame: Ora:
 Exam Info:

Cornea Front

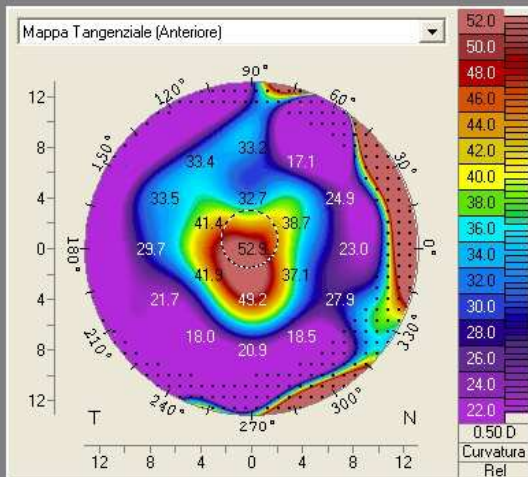
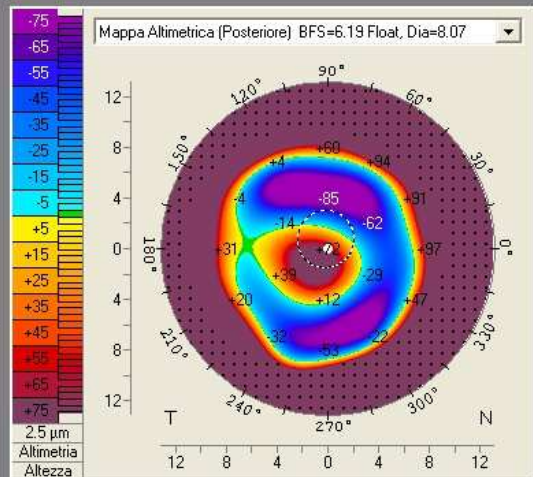
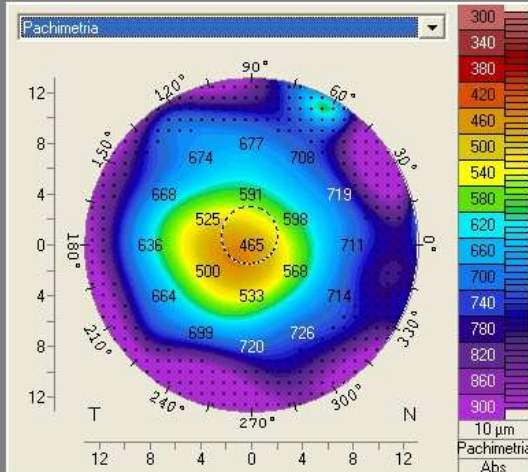
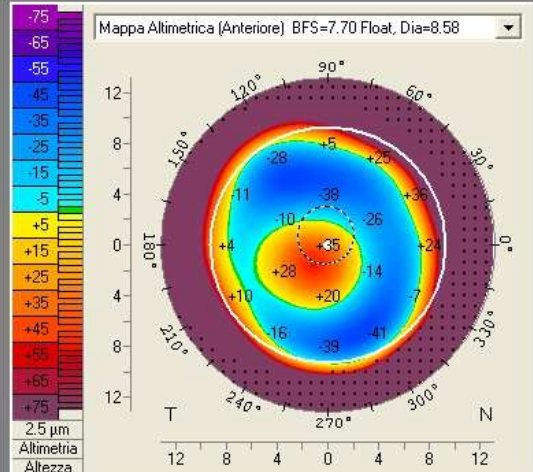
Rh: K1:
 Rv: K2:
 Rm: Km:
 QS: Asse: Astig:
 Q-val: Rper: Rmin:

Cornea Back

Rh: K1:
 Rv: K2:
 Rm: Km:
 QS: Asse: Astig:
 Q-val: Rper: Rmin:

Pupil Center: + x[mm]: y[mm]:
 Pachy Apex: •
 Thinnest Locat.: ○
 K Max. (Front): •

Cornea Volume: KPD:
 Chamber Volume: Angle:
 A. C. Depth (Int.): Pupil Dia:
 Enter IOP | IOP(cor): Lens Th.:

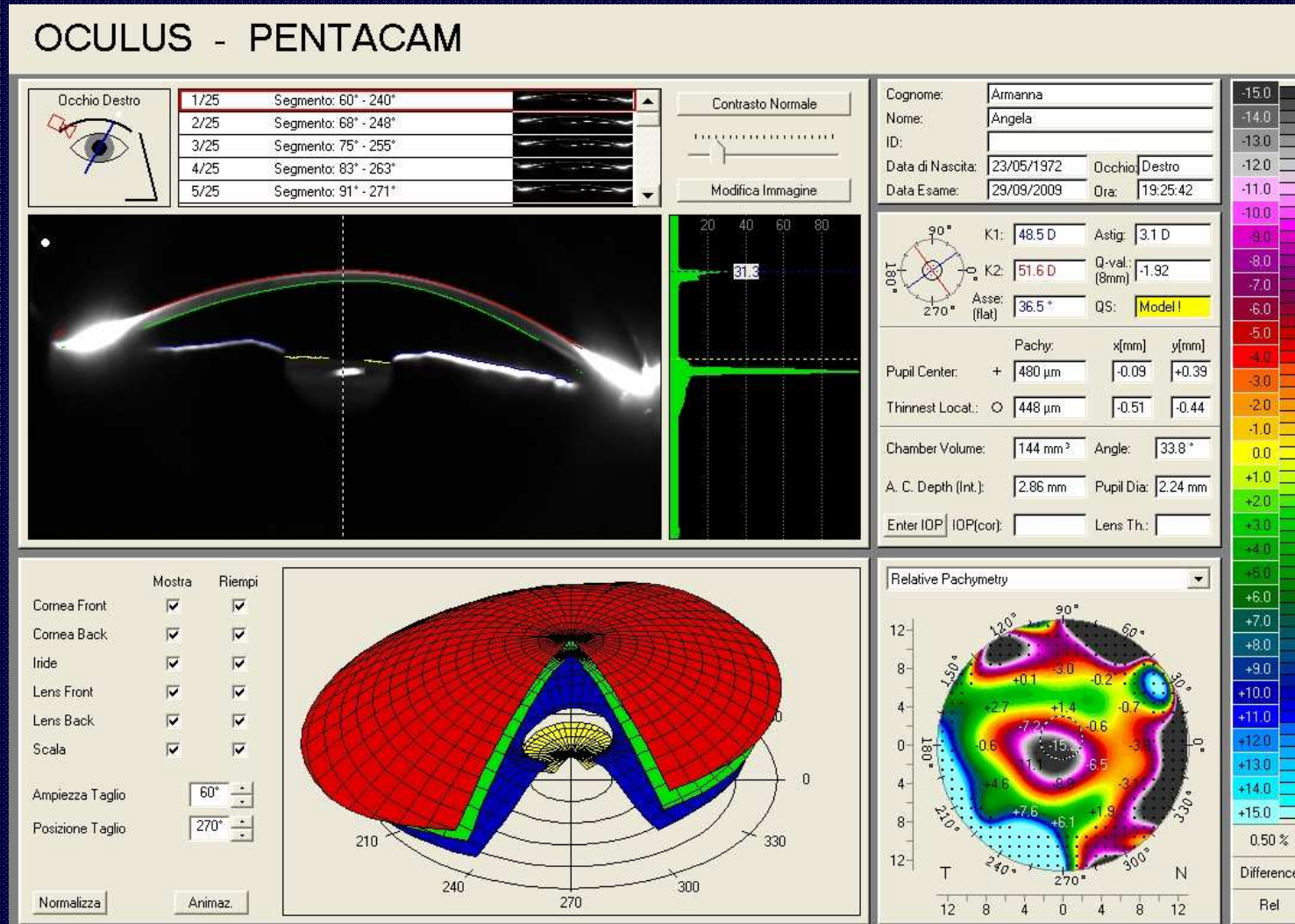


PRE

K1=48.5D

K2=51.6D

CASO CLINICO : A.A. 38 ANNI F



PRE

OD: -3 -2.75 α40

UCVA 2/10 BCVA 4/10

CASO CLINICO : A.A. 38 ANNI F

OCULUS - PENTACAM

Cognome: Cavallaro
 Nome: Fabio Francesco
 ID:
 Data di Nascita: 24/01/1982 Occhio: Destro
 Data Esame: 01/04/2009 Ora: 19:30:21
 Exam Info:

Cornea Front

Rh: 7.92 mm K1: 42.6 D
 Rv: 7.40 mm K2: 45.6 D
 Rm: 7.66 mm Km: 44.1 D
 QS: Model Asse: 20.7° Astig: 3.0 D
 Q-val: (8mm) -1.32 Rper: 8.64 mm Rmin: 6.93 mm

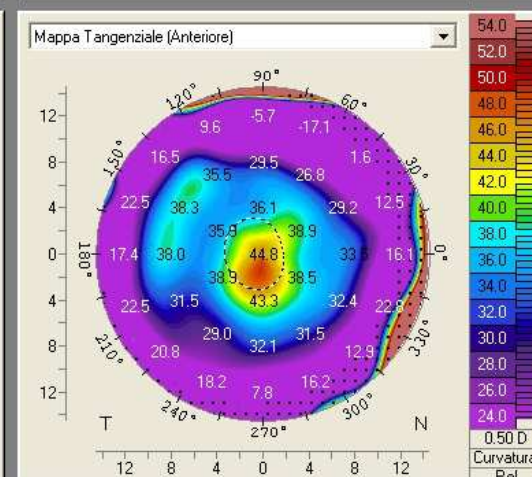
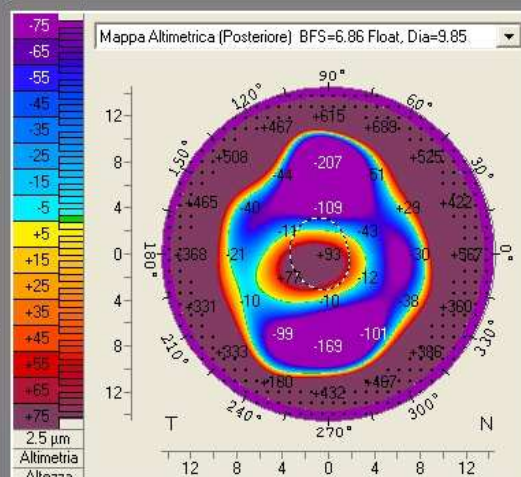
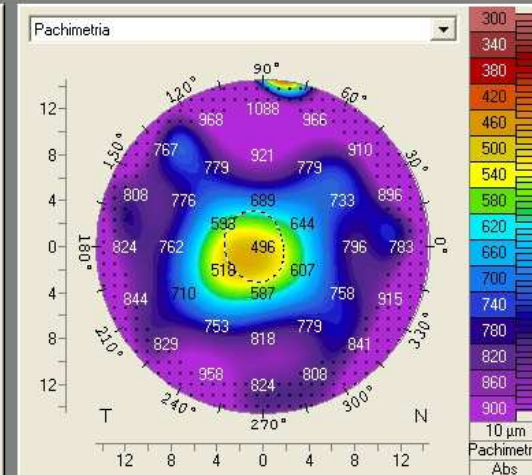
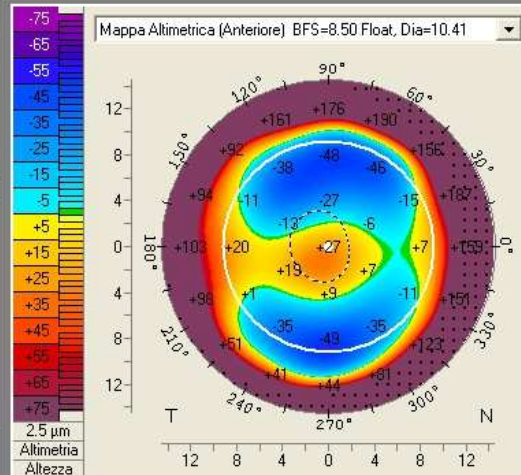
Cornea Back

Rh: 5.62 mm K1: -7.1 D
 Rv: 4.73 mm K2: -8.5 D
 Rm: 5.17 mm Km: -7.7 D
 QS: Data Asse: 12.6° Astig: 1.3 D
 Q-val: (8mm) -2.15 Rper: 7.56 mm Rmin: 3.94 mm

Pupil Center: + Pachy: x[mm] y[mm]
 487 μm -0.40 0.00
 Pachy Apex: 496 μm 0.00 0.00
 Thinnest Locat: 475 μm -0.65 -0.49

Cornea Volume: 63.8 mm³ KPD: +3.3 D
 Chamber Volume: 229 mm³ Angle: 33.0°
 A. C. Depth (Int.): 3.48 mm Pupil Dia: 2.83 mm

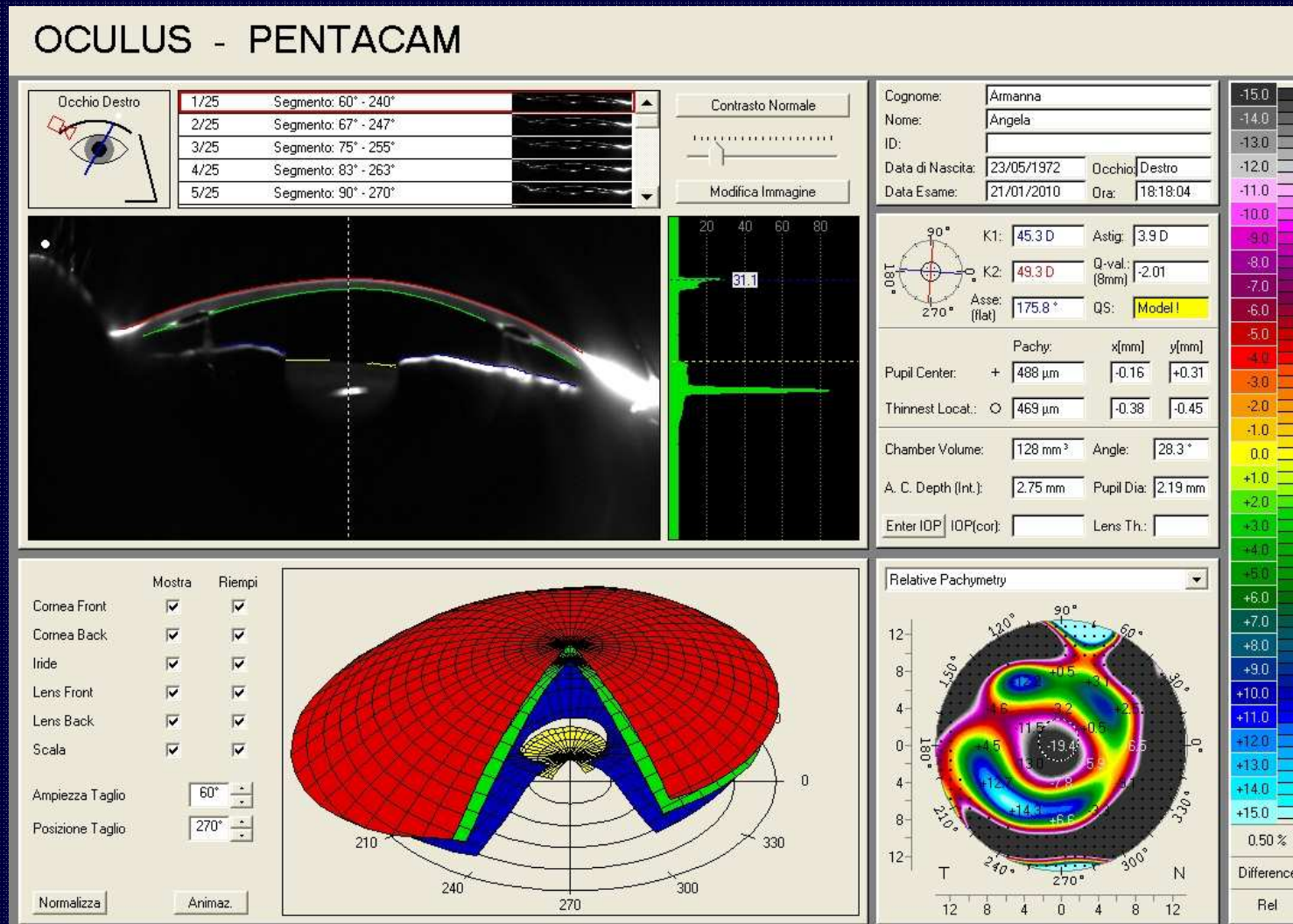
Enter IOP IOP(cor) Lens Th:



POST 120gg K1=42.6D

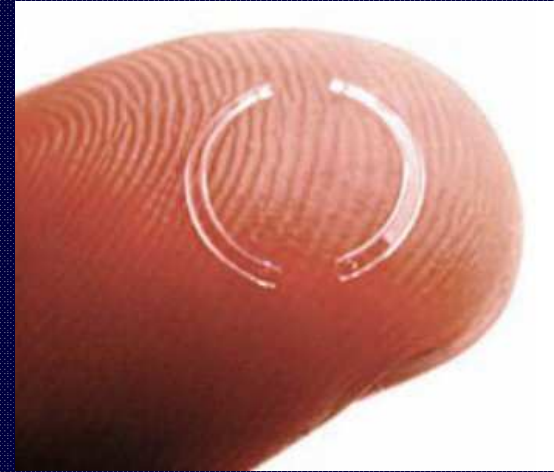
K2=45.6D

CASO CLINICO : A.A. 38 ANNI F



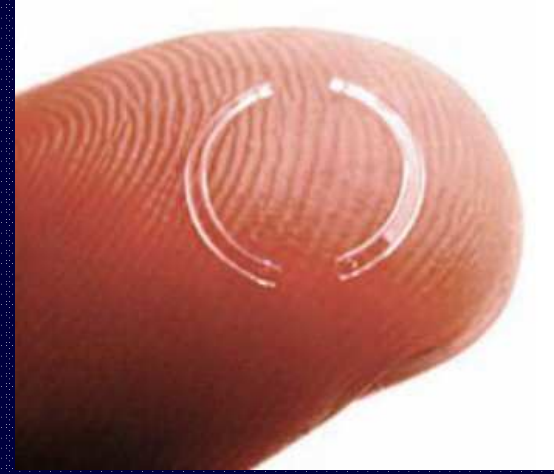
POST 120gg OD: -1 -1.50 a40
 UCVA 4/10 BCVA 8/10

Risultati



- UCVA 2/10 4/10
- BCVA 4/10 7-8/10
- Riduzione dell'equivalente sferico
- Riduzione dell'astigmatismo irregolare
- Aumento della regolarizzazione topografica
della regione corneale centrale

Conclusioni



- Maggiore stabilità dell'impianto
- Miglior risultato refrattivo finale

M.H.Shabayek e all., Intrastromal Corneal Ring Segment Implantation by Femtosecond Laser for Keratoconus Correction, Ophthalmology Nov 2007

A close-up photograph of a human eye with a contact lens. The lens is clear and covers the iris and pupil. The text "GRAZIE PER L'ATTENZIONE!" is overlaid in blue, serif font across the center of the eye.

GRAZIE PER L'ATTENZIONE !