

STANDARDIZZAZIONE DEL CORSO BASE DELLA SOCIETA' ITALIANA DI MICROCHIRURGIA

LE PRIME DIECI ORE



COMMISSIONE FORMAZIONE
SIM



Società Italiana di Microchirurgia - Presidente Pierluigi Tos



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Formazione

CORSO BASE MICROCHIRURGIA

CORSO AVANZATO MICROCHIRURGIA

CORSO LEMBI SU MODELLO VIVENTE

CORSO DI DISSEZIONE CHIRURGICA

FELLOWSHIP CLINICA ITALIANA IN MICROCHIRURGIA

Presto on-line le informazioni sul Corso Base di Microchirurgia



Corsi Base Microchirurgia

CRITERI MINIMI PER ACCREDITAMENTO SIM

CORSI ACCREDITATI

SOCIETA' ITALIANA DI MICROCHIRURGIA

Standardizzazione del corso base di microchirurgia

IL CONTESTO

6-8 CORSI BASE IN ITALIA,

Modi diversi di insegnare, valutare, ore di pratica...solo 2 valutano le competenze acquisite al termine

1 CORSO AVANZATO – 120 h – SIM

Regole di ammissione:

Corso base

sutura di tubo di 1mm in 30'

SOCIETA' ITALIANA DI MICROCHIRURGIA

Standardizzazione del corso base di microchirurgia

COMMISSIONE

STANDARDIZZAZIONE CORSI BASE

Cordinatore - R Baraziol

E Fraccalanza - **Udine**

B Panero, A Crosio - **Torino**

L Moccia, A Soldati - **Napoli**

M Riccio, P Pangrazi - **Ancona**

F Boriani - **Bologna**

E Cigna - **Roma**

A Occhini - **Pavia**

A Poggetti - **Pisa**

A Pedrazzini - **Parma**

S D'Arpa - F Toia - **Palermo**

M Baronetti - **Bari**



11 centri

Universitari e Ospedalieri

OBIETTIVO DELLA COMMISSIONE

STANDARD MINIMO PER ACCREDITAMENTO DEI CORSI

INSEGNAMENTO DELLE PRIME 10 ORE

**METODO DI VALUTAZIONE DELLE COMPETENZE
ACQUISITE**

**IL PRIMO OBIETTIVO CONSISTE NEL PREPARARE LO
STUDENTE A LAVORARE SU MODELLI VIVENTI (ES RATTI)
ACCURATAMENTE E AGILMENTE NEL RISPETTO DELLE 3R**

ACCREDITAMENTO CORSI BASE DI MICROCHIRURGIA

Gli organizzatori dei corsi base di Microchirurgia che desiderano essere accreditati e patrocinati dalla Società Italiana di Microchirurgia dovranno fare richiesta al coordinatore della commissione formazione della Società (segreteria@microchirurgia.org) e dichiarare che il corso rispetta non solo i requisiti minimi ma anche la progressione didattica fornita dalla commissione standardizzazione corsi base qui di seguito esposta.

REGOLE GENERALI PER I CORSI BASE

1 microscopio a studente

20 ore di pratica

Strumenti microchirurgici:

**pinze, 1 porta aghi, 1 forbice microchirurgica, 1
approssimatore, fili 8-0/9-0.**

Prime 10 ore su modelli non viventi

1 tutor ogni 3 studenti

REGOLE GENERALI PER I CORSI BASE

LEZIONI FRONTALI

Prima delle sessioni pratiche verranno svolte delle lezioni teoriche.

ARGOMENTI TRATTATI:

principi di ottica, strumenti, nodi, ergonomia, come confezionare il punto, come eseguire una sutura vascolare e una nervosa, tecniche di base.

**PRESENTAZIONE DEL METODO DI VALUTAZIONE
FINALE E SPIEGAZIONE DI TUTTI GLI STEP DEL GRS**



Queen Mary Uni Barts Modified Global Rating Score

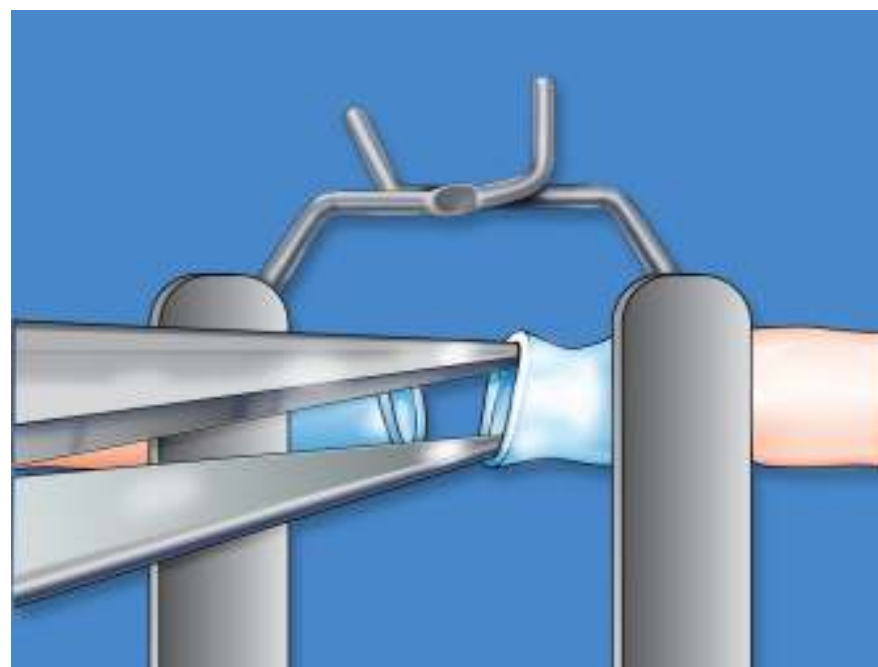


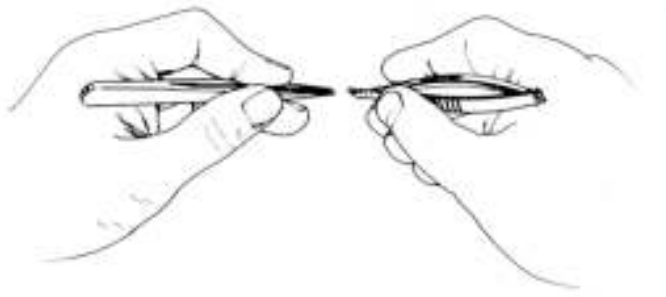
20 componenti
18 + 2 per modelli viventi

Queen Mary University London Microsurgery Global Rating Scale QMUL Micro GRS

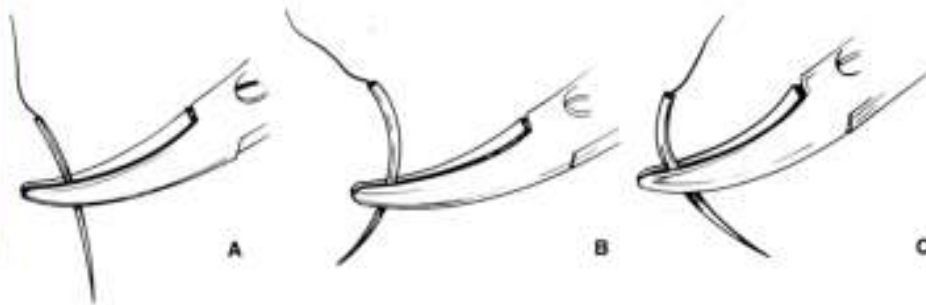
Name/ID:	Setting			1	2	3	4	5	Score
	Component	Procedure	1-5 if there are any of the following errors observed during the procedure						
Preparation of operative field	51	Preparation of operative field	Prep area draped that operation field not ready for procedure, obscured or blurred view without background	Not draped or draped incorrectly, obscured or blurred background	Draped, obscured or blurred background but still in-operative operative field through procedure map to not clear out (2000) of better	Draped, obscured or blurred background but still in-operative operative field through procedure map to not clear out (2000) of better	Draped, obscured or blurred background but still in-operative operative field through procedure map to not clear out (2000) of better	Draped, obscured or blurred background but still in-operative operative field through procedure map to not clear out (2000) of better	Draped, obscured or blurred background but still in-operative operative field through procedure map to not clear out (2000) of better
	52	Instrument handling and hand focus	Preparation of instrument	Correct use of instruments, but frequent fumble	Correct handling of instrument, but incorrectly handle with non-dominant hand	Correct handling of instrument, but incorrectly handle with non-dominant hand	Correct handling of instrument, but incorrectly handle with non-dominant hand	Correct handling of instrument, but incorrectly handle with non-dominant hand	Correct handling of instrument, but incorrectly handle with non-dominant hand
	53	Number of attempts to pick up the needle	Chosen needle to hold and maintain to pick up needle after 1-2 attempts	3 attempts	2-4 attempts	2-4 attempts	2-4 attempts	2-4 attempts	2-4 attempts
	54	Technique to pick up and mount needle	Chosen needle to pick up with fingers OR handles, needle with non-instruments at the same time	Chosen needle to pick up attempting to pick it up directly or takes 2 attempts to pick and mount/needle	Manages to pick-up the needle from suture and mounts it in dominant hand/instrument in 2-3 attempts	Manages to pick-up the needle from suture and mounts it in dominant hand/instrument in 2-3 attempts	Manages to pick-up the needle from suture and mounts it in dominant hand/instrument in 2-3 attempts	Manages to pick-up the needle from suture and mounts it in dominant hand/instrument in 2-3 attempts	Manages to pick-up the needle from suture and mounts it in dominant hand/instrument in 2-3 attempts
	55	Needle to Needle holder angle (horizontal plane)	Incorrect positioning of needle with needle pointing downwards in line of intended travel	Stable in position/needle correctly. One close to other type or 90° or to correct position in 1st attempt	Position needle correctly in 2-4 attempts OR needle pointing upwards in line of intended travel	Position needle correctly in 2-4 attempts OR needle pointing upwards in line of intended travel	Position needle correctly in 2-4 attempts OR needle pointing upwards in line of intended travel	Position needle correctly in 2-4 attempts OR needle pointing upwards in line of intended travel	Position needle correctly in 2-4 attempts OR needle pointing upwards in line of intended travel
Needle Handling	56	Needle to Needle holder angle (rotational plane)	Unstable position/needle correctly in 1-2 attempts (angle less acute or less obtuse)	Position needle correctly in 1-2 attempts	Position needle correctly in 2-4 attempts	Position needle correctly in 2-4 attempts	Position needle correctly in 2-4 attempts	Position needle correctly in 2-4 attempts	Position needle correctly in 2-4 attempts
	57	Angle of needle to tissue	Stable in position/angle. Sharp needle or points already through tissue and pulling	Frequently too acute or too flat	Occasionally too acute or too flat	Occasionally too acute or too flat	Occasionally too acute or too flat	Occasionally too acute or too flat	
	58	Driving needle through vessel wall	Attempts carried out without use of counter pressure	3 or more attempts / occasional use of counter pressure	2-4 attempts / appropriate use of counter pressure	2-4 attempts / appropriate use of counter pressure	2-4 attempts / appropriate use of counter pressure	2-4 attempts / appropriate use of counter pressure	2-4 attempts / appropriate use of counter pressure
	59	Guiding needle through vessel wall	Cuts through vessel wall	Pulls vessel through in a straight line following tension OR pulls suture immediately upwards	Follows needle curvature BUT pulls vessel through without a pulling/counter pressure	Follows needle curvature BUT pulls vessel through without a pulling/counter pressure	Follows needle curvature BUT pulls vessel through without a pulling/counter pressure	Follows needle curvature BUT pulls vessel through without a pulling/counter pressure	Follows needle curvature BUT pulls vessel through without a pulling/counter pressure
Tissue Handling	60	Needle damage	Breaks tip or needle	Grabs needle tip	needle handle flattened	needle handle flattened	needle handle flattened	needle handle flattened	needle handle flattened
	61	Handling of vessel	Tears vessel wall during suturing or changing suture	Attempts to handle tissue with care BUT grasp vessel edges	Fails to clear suture OR any suture beyond 3 needles thickness	Fails to clear suture OR any suture beyond 3 needles thickness	Fails to clear suture OR any suture beyond 3 needles thickness	Fails to clear suture OR any suture beyond 3 needles thickness	Fails to clear suture OR any suture beyond 3 needles thickness
Suture Handling	62	Tissue bite	Vessel distortion as a result of unequal tension bites on opposing edges AND between bites	Unusual tissue bite or opposing edges AND between bites without vessel distortion	Occasionally takes too wide or too small a bite or opposing edges OR unequal spaces between bites	Occasionally takes too wide or too small a bite or opposing edges OR unequal spaces between bites	Occasionally takes too wide or too small a bite or opposing edges OR unequal spaces between bites	Occasionally takes too wide or too small a bite or opposing edges OR unequal spaces between bites	Occasionally takes too wide or too small a bite or opposing edges OR unequal spaces between bites
	63	Suture damage	Breaks suture	Start suture	Partial partial opening of suture ends	Partial partial opening of suture ends	Partial partial opening of suture ends	Partial partial opening of suture ends	Partial partial opening of suture ends
operative Flow	64	Make a loop or a slip "THU, loop, pick, tighten"	Does not clear field of vision suture loops, obscured draping of face off top of instrument	Line or free edge on top OR too short for optimum working OR entangled and struggling with surface tension	Starts from a prepared field with optimum suture position but fails to make a loop or 4 slip moves	Starts from a prepared field with optimum suture position but fails to make a loop or 4 slip moves	Starts from a prepared field with optimum suture position but fails to make a loop or 4 slip moves	Starts from a prepared field with optimum suture position but fails to make a loop or 4 slip moves	Starts from a prepared field with optimum suture position but fails to make a loop or 4 slip moves
	65	Needs tension and squaring	NEED requires tension	Frequently Does not require tension OR looks too loose or too tight	Square tension BUT pulls suture perpendicular to vessel direction	Square tension BUT pulls suture perpendicular to vessel direction	Square tension BUT pulls suture perpendicular to vessel direction	Square tension BUT pulls suture perpendicular to vessel direction	Square tension BUT pulls suture perpendicular to vessel direction
	66	Use of magnification	Does not use or offset magnification	Occasionally uses offset magnification	Does variable magnification immediately OR tends to increase or use magnification power for both needles, suture and suture	Does variable magnification immediately OR tends to increase or use magnification power for both needles, suture and suture	Does variable magnification immediately OR tends to increase or use magnification power for both needles, suture and suture	Does variable magnification immediately OR tends to increase or use magnification power for both needles, suture and suture	Does variable magnification immediately OR tends to increase or use magnification power for both needles, suture and suture
Quality of end product	67	Operative Flow	Unstable or complete loss OR no tension/relaxation steps with frequent movements OR no check for back wall suturing	Complete procedure but very steady	Does not stop AND checks for back wall suturing BUT process in either rotated steps or vessel horizontal plane	Does not stop AND checks for back wall suturing BUT process in either rotated steps or vessel horizontal plane	Does not stop AND checks for back wall suturing BUT process in either rotated steps or vessel horizontal plane	Does not stop AND checks for back wall suturing BUT process in either rotated steps or vessel horizontal plane	Does not stop AND checks for back wall suturing BUT process in either rotated steps or vessel horizontal plane
	68	Time taken for anastomosis (up to 10 attempts)	<10 min	10-15 min	15-20 min	20-30 min	30-40 min	40-50 min	>50 min
Total Score	69	"Quality of anastomosis"	Unacceptable column and/or line coming apart OR obvious tears and tissue damage OR significant vessel distortion	Good Quality column and/or line coming apart OR obvious tears and tissue damage OR significant vessel distortion	Acceptable column and/or line coming apart OR obvious tears and tissue damage OR significant vessel distortion	Acceptable column and/or line coming apart OR obvious tears and tissue damage OR significant vessel distortion	Acceptable column and/or line coming apart OR obvious tears and tissue damage OR significant vessel distortion	Acceptable column and/or line coming apart OR obvious tears and tissue damage OR significant vessel distortion	Acceptable column and/or line coming apart OR obvious tears and tissue damage OR significant vessel distortion
	70	Patency	Not patent OR narrow back wall OR OR Dist						Patent

Preparazione del campo operatorio	S1	Preparazione e organizzazione del campo operatorio	Inizia senza adeguato allestimento del campo operatorio, campo ostruito o disordinato. No sfondo
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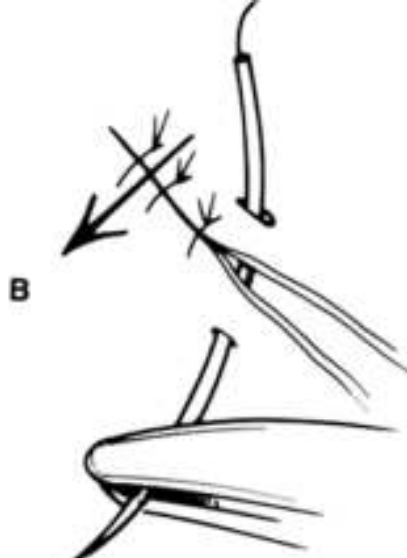
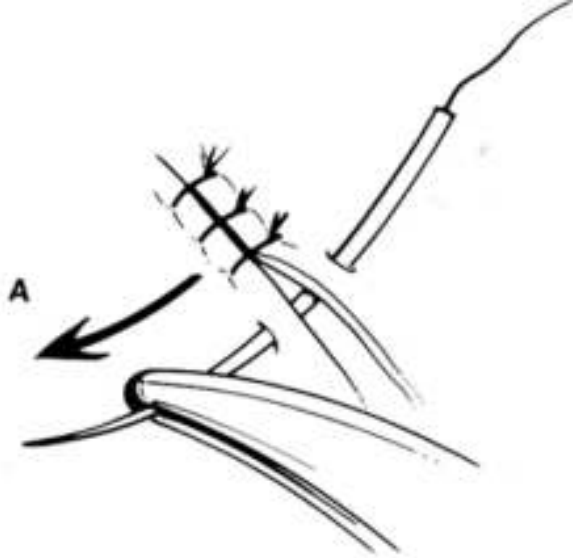
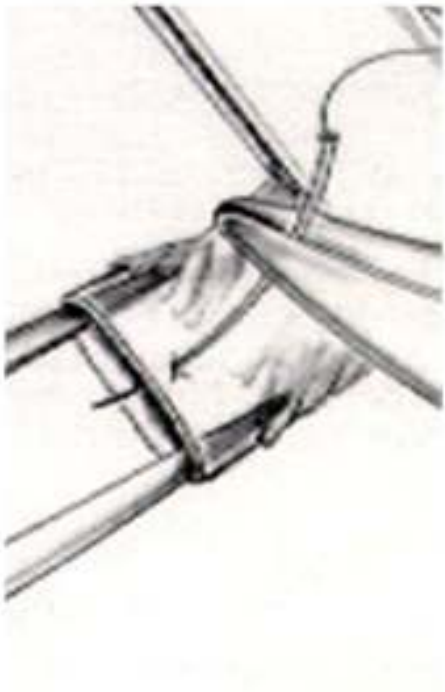
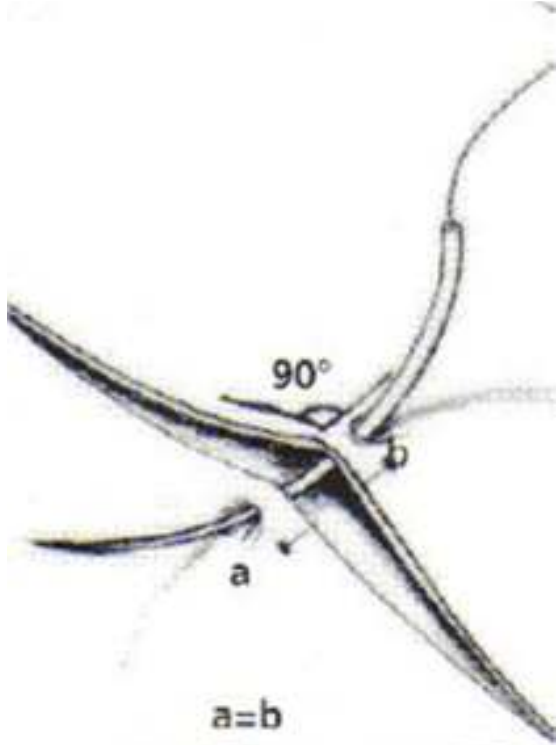


Destrezza/tenuta dello strumento	S2	Impugnatura dello strumento e tremore
	S3	Tecnica di raccolta e montaggio dell'ago
	S4	Angolo dell'ago nel porta aghi (piano orizzontale e verticale)

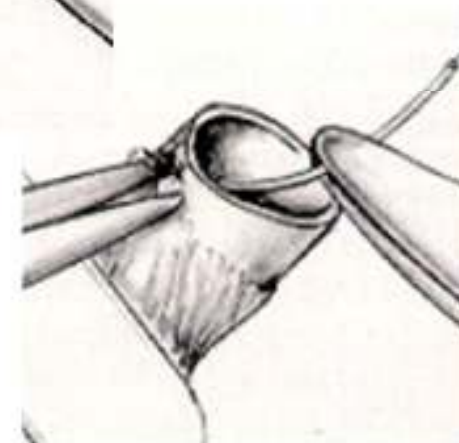
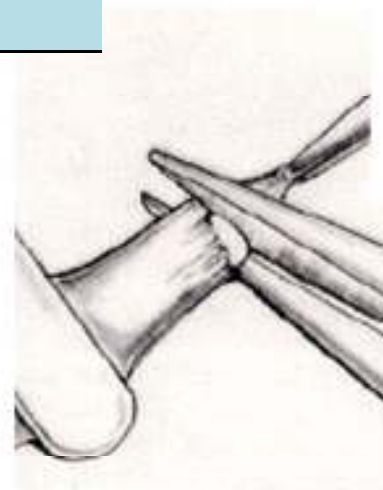
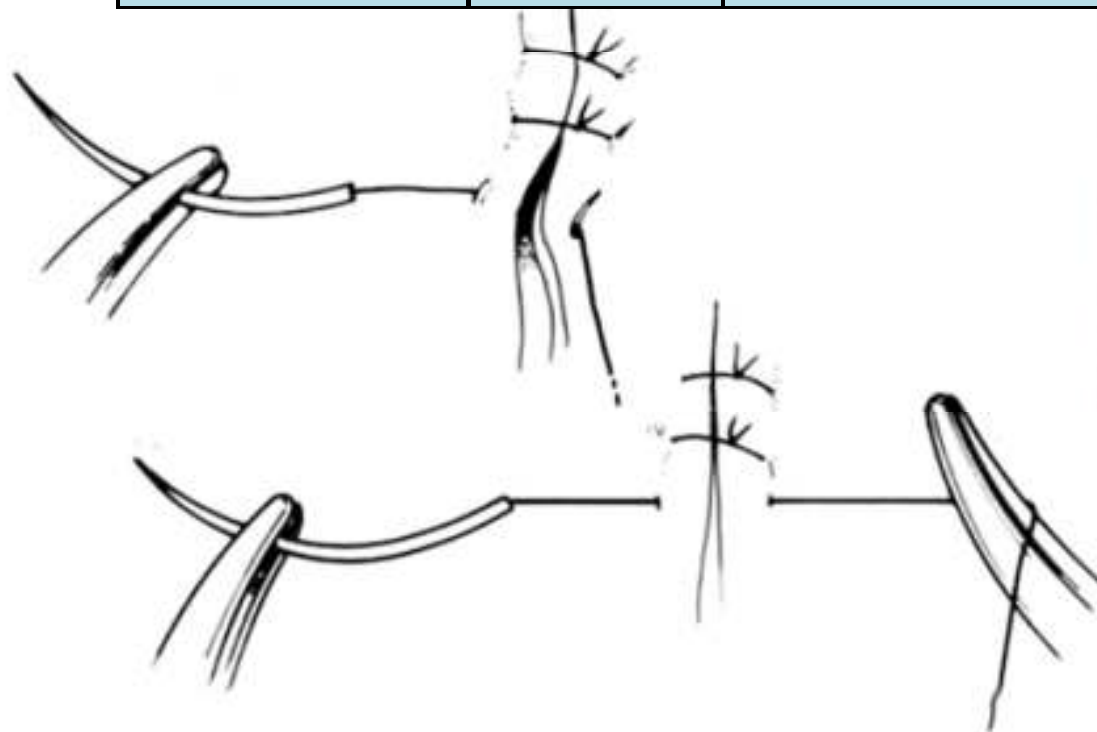
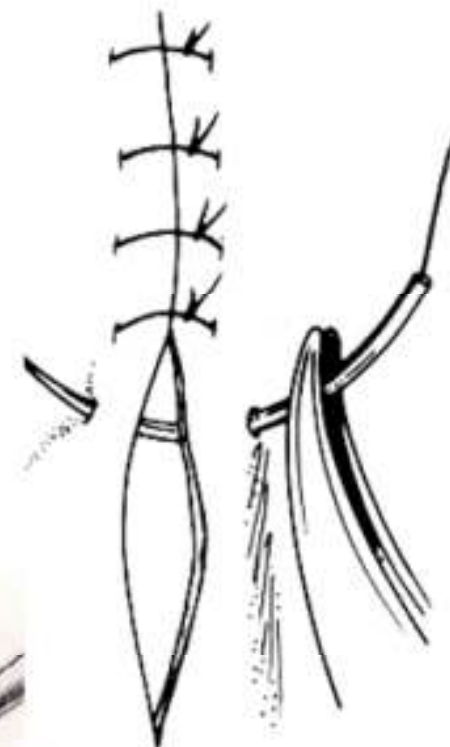




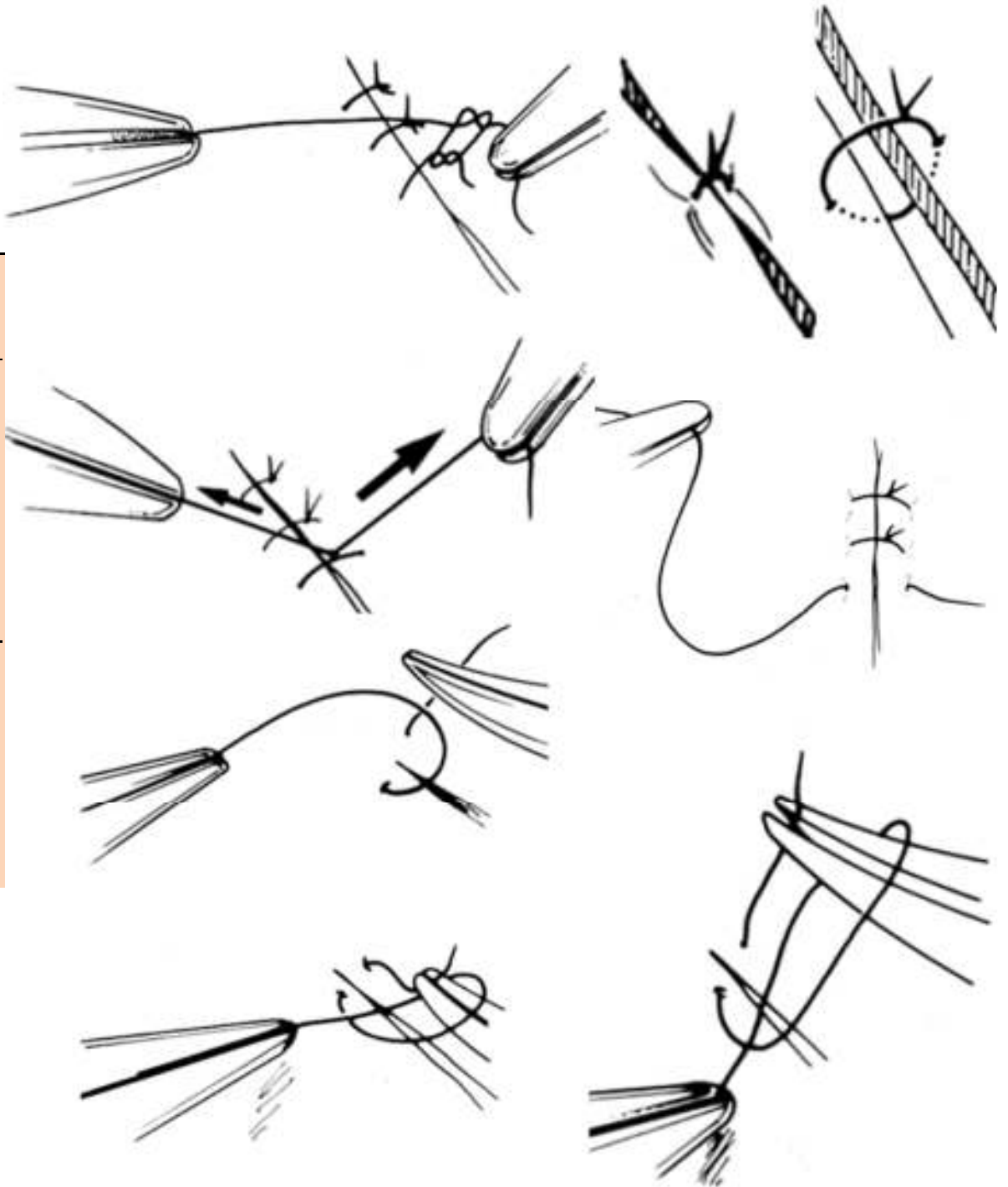
Gestione dell'ago durante la sutura	S5	Angolo di ingresso dell'ago nella parete vascolare
	S6	Passaggio dell'ago nella parete
	S7	Guida dell'ago
	S8	Danneggiamento dell'ago



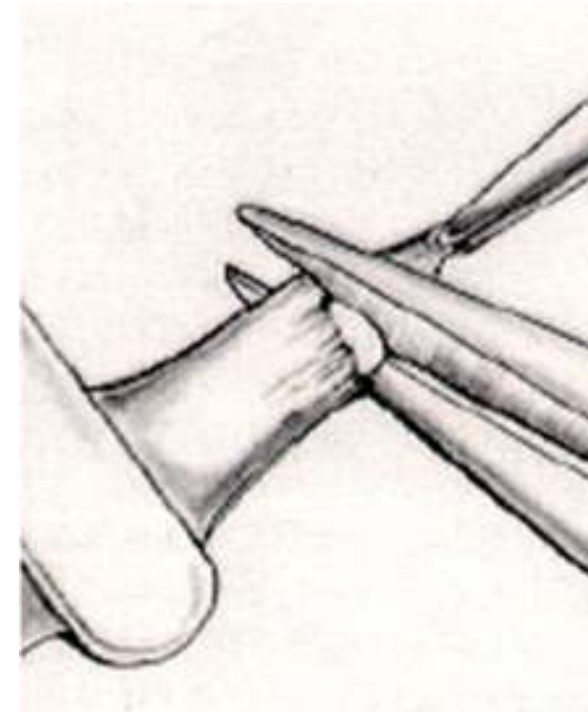
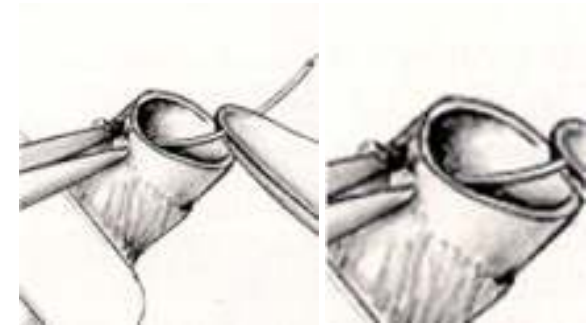
Gestione dei tessuti	S9	Manipolazione del vaso
	S10	Sutura



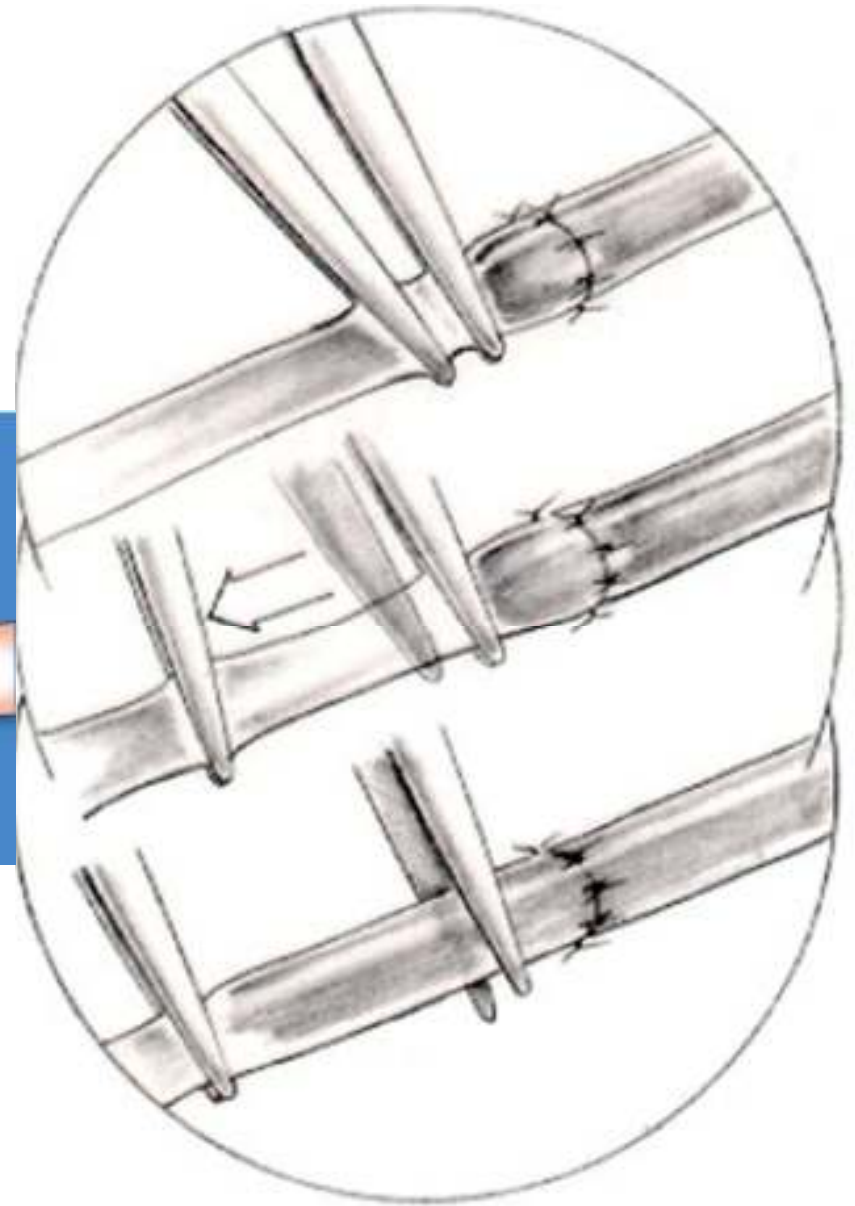
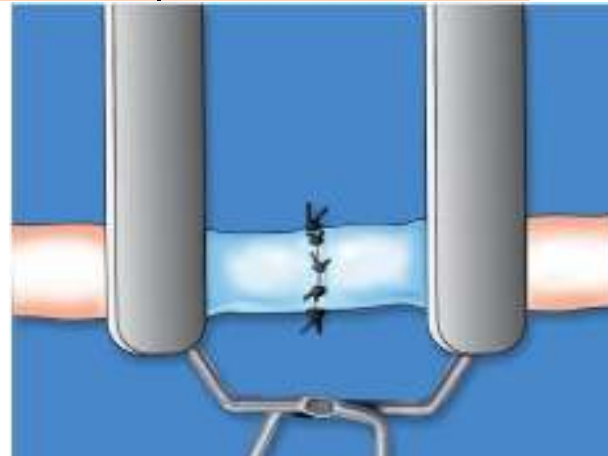
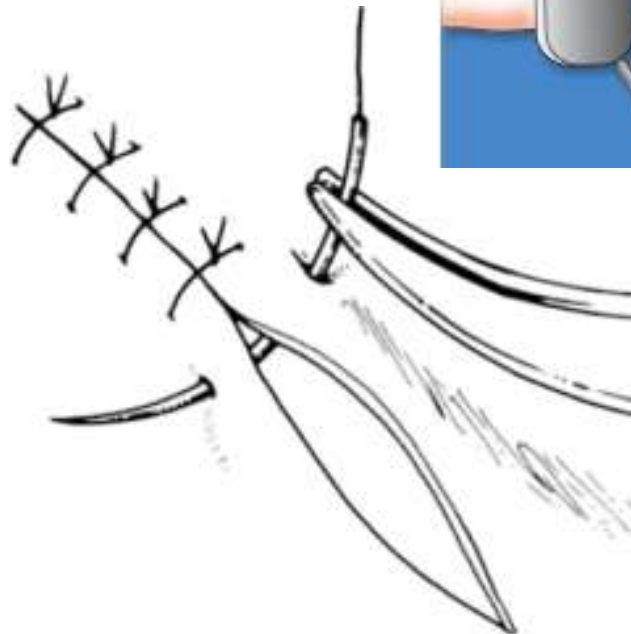
Gestione della sutura	S11	Danneggiamento della sutura
	S12	Nodo in 4 passaggi: prendere, girare, prendere, stringere
	S13	Tenuta del nodo e quadratura



Flusso operativo	S14	Uso dell'ingrandimento
	S15	Preparazione del vaso per l'anastomosi
	S16	Flusso operativo
	S17	Irrigazione
	S18	Tempo per anastomosi (fino a 10 punti)



Qualità del prodotto finale	S19	Qualità dell'anastomosi **
	S20	Pervietà*



PASSAGGI FONDAMENTALI DELLE PROGRESSIONE DIDATTICA **MACRO**

COME UTILIZZARE GLI STRUMENTI

MACRO

COME DARE IL NODO/NODO
PIATTO

COME GESTIRE L'AGO E IL FILO

COME FAR TRAPASSARE
L'AGO

PASSAGGI FONDAMENTALI DELLA PROGRESSIONE DIDATTICA

**Manipolazione degli strumenti microchirurgici,
posizione delle mani con gli strumenti**

(impugnatura tipo penna, pollici verso l'alto, posizione
neutrale dell'avambraccio, lato ulnare della mano
appoggia sul tavolo)

**Prima esercitazione: confezionare nodo piano su garza
con filo 3-0 con STRUMENTI MICROCHIRURGICI**

Requisito minimo per passaggio successivo:

**20 nodi piani consecutivi con inversione
mani/decisione del tutor**

IL NODO

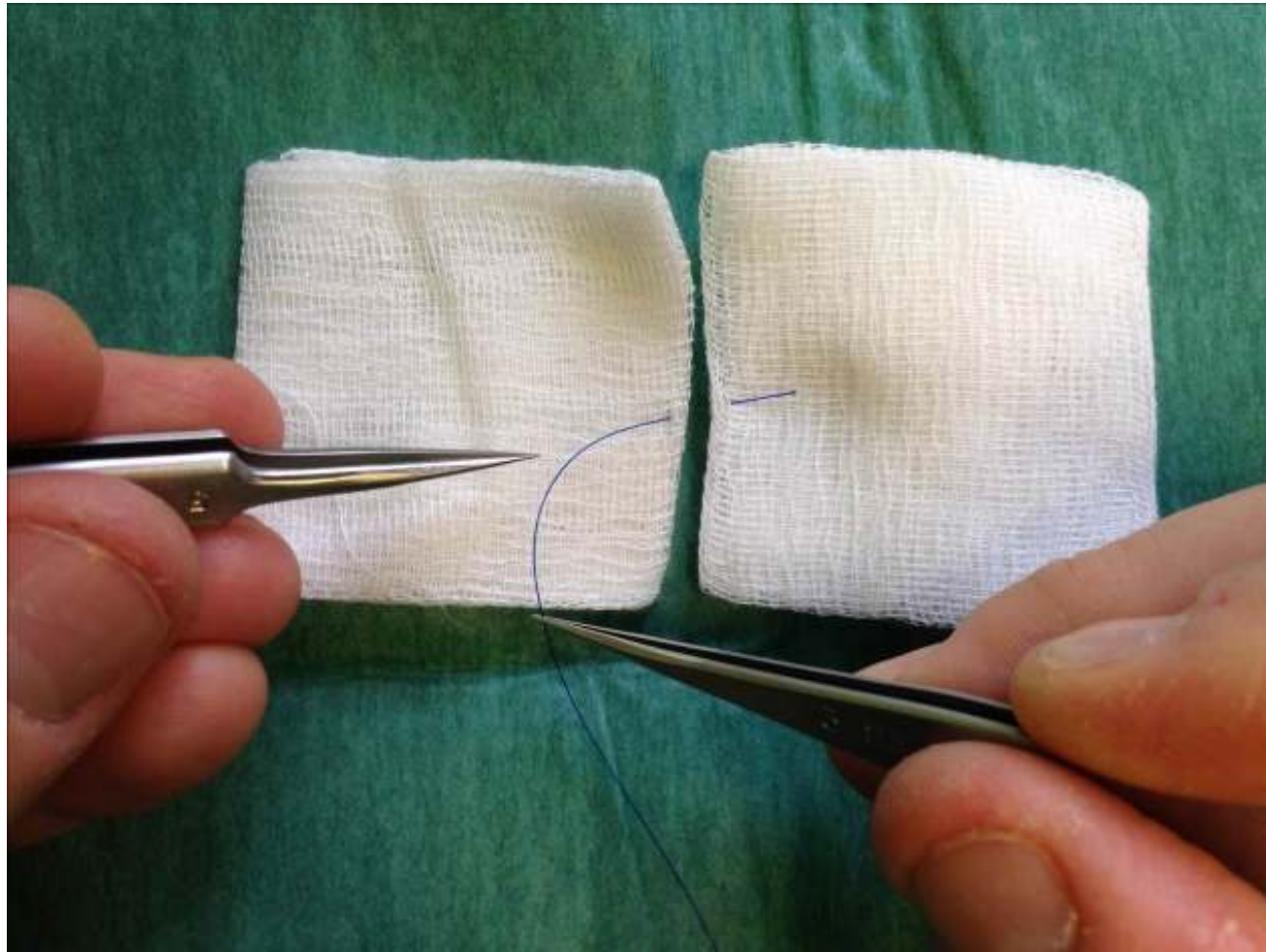
Lasciare l'ago





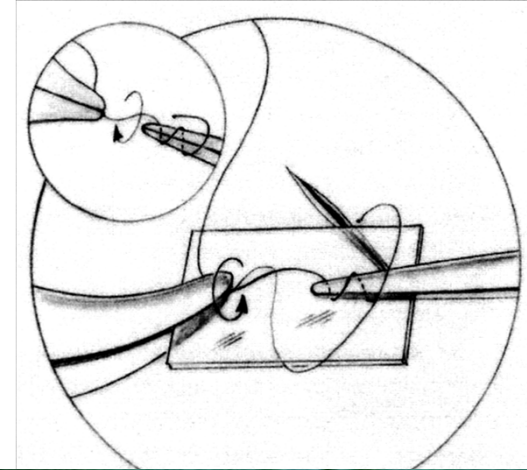
NODO IN QUATTRO MOSSE

1) Impugnare il filo (destra) e mirare la coda (sinistra)



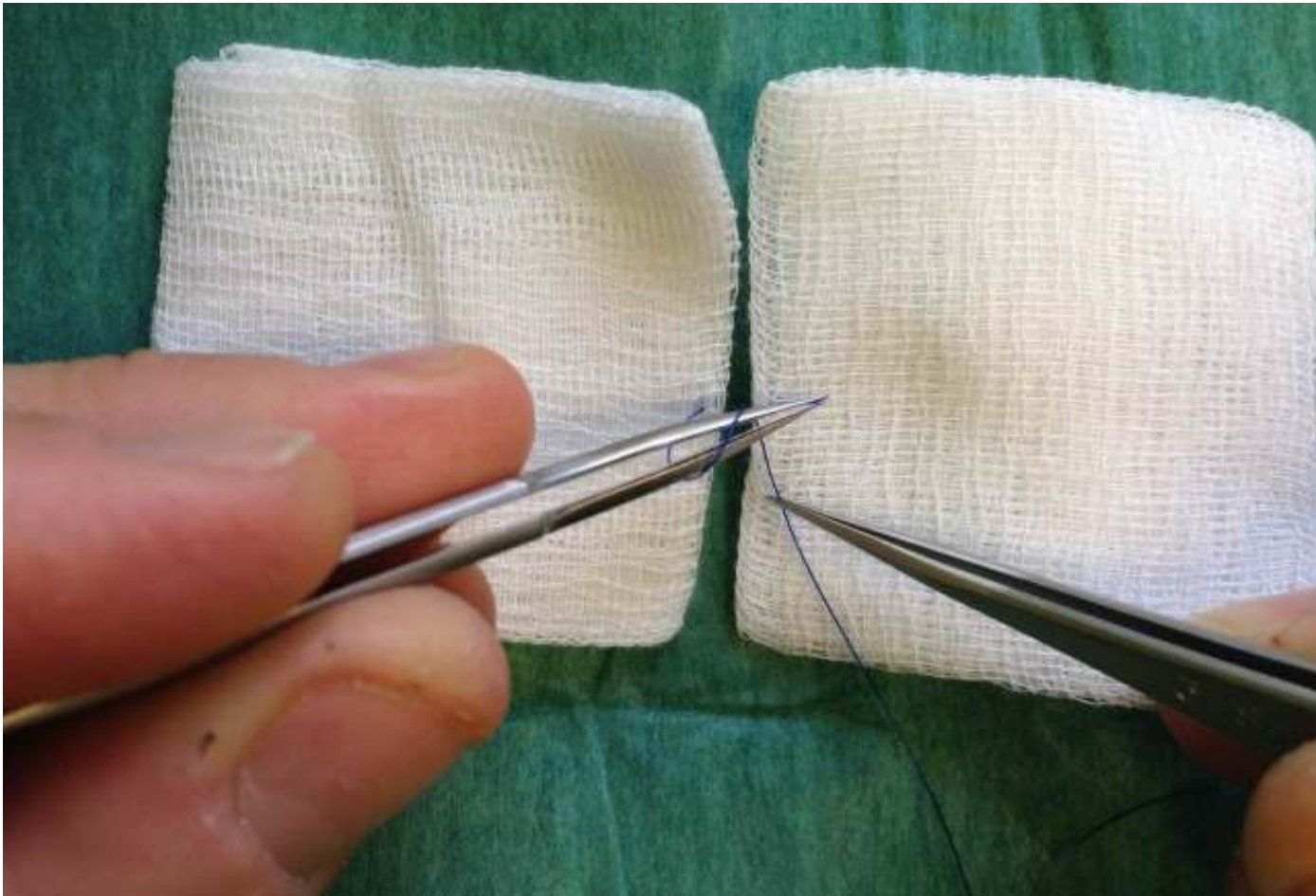
NODO IN QUATTRO MOSSE

2) Circondare la punta della pinza con
Il filo
LOOP



NODO IN QUATTRO MOSSE

3. IMPUGNARE LA CODA



NODO IN QUATTRO MOSSE

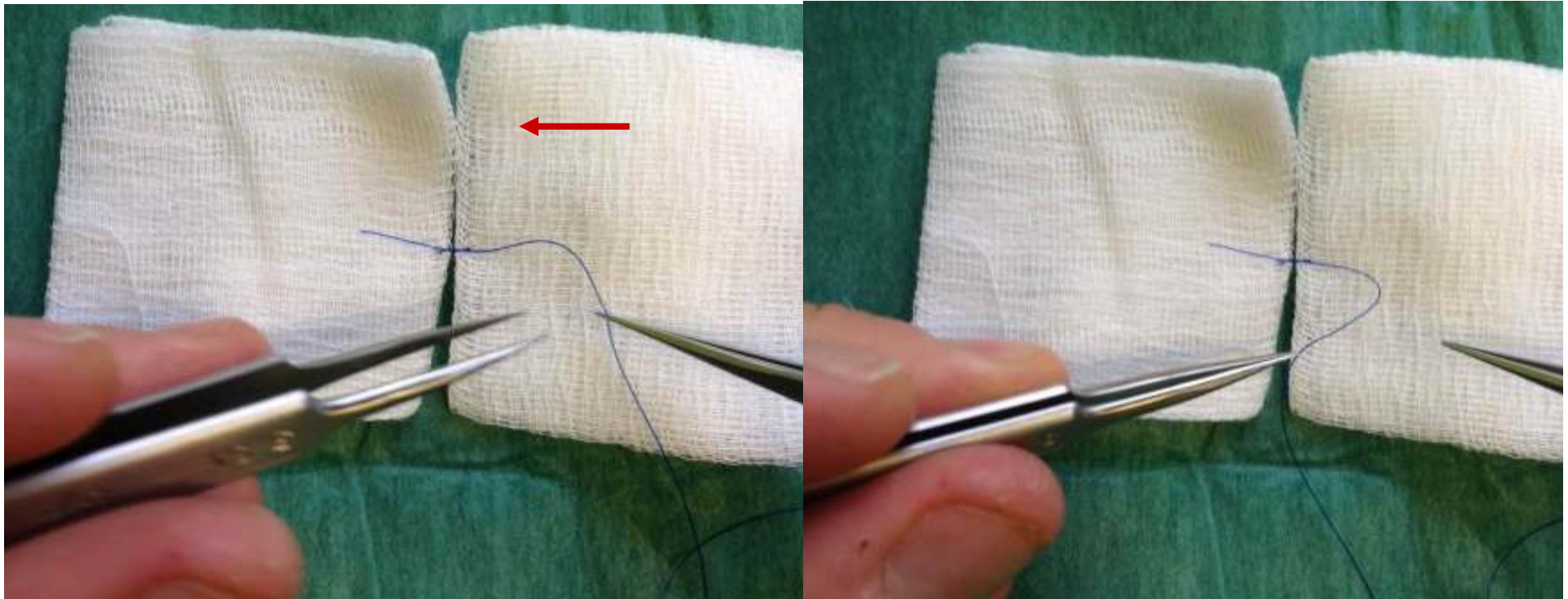
TIRARE

NODO PIANO



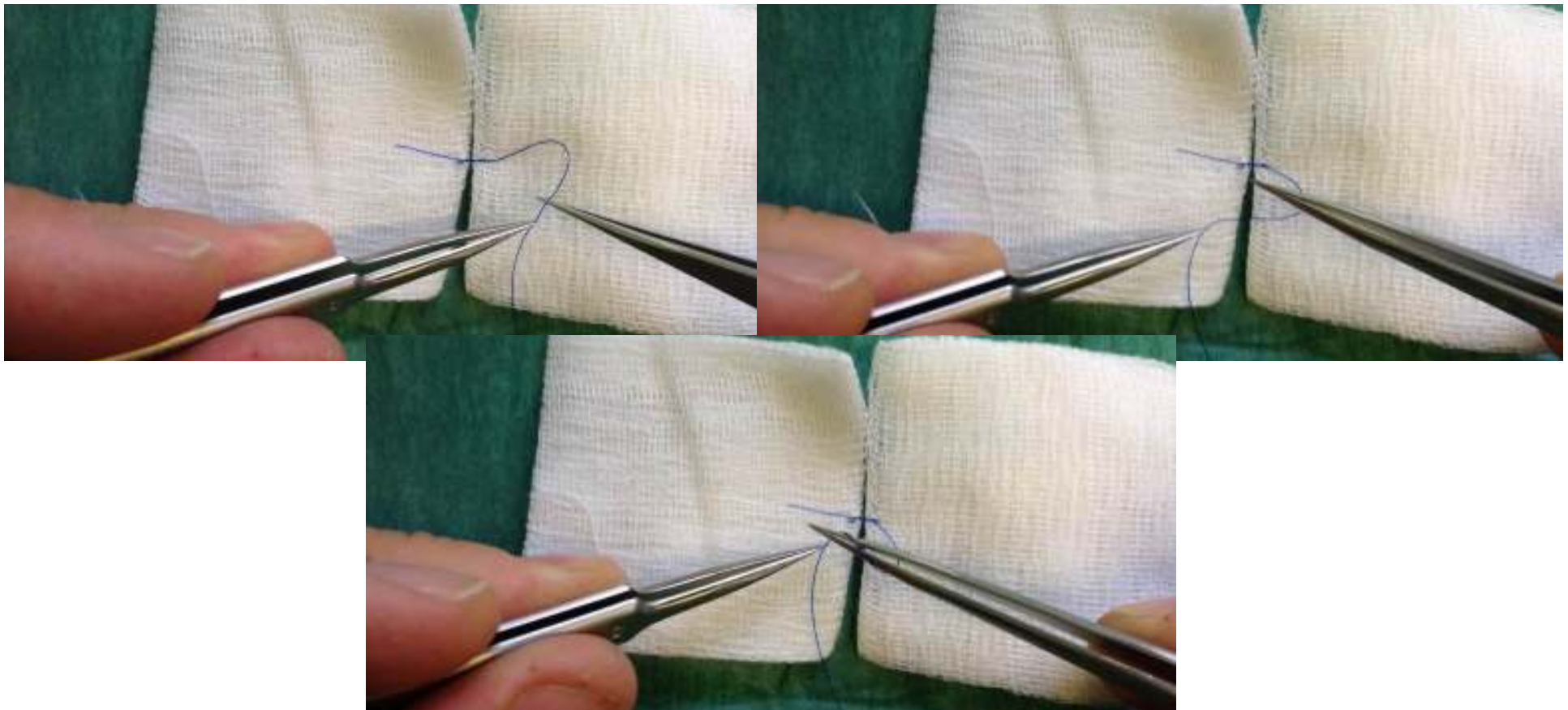
SECONDO NODO

INVERTIRE LE MANI e PASSARE IL FILO
LUNGO NELL'ALTRA PINZETTA



SECONDO NODO

PINZA LIBERA CHE “CERCA” LA CODA
AL DAVANTI DEL FILO E FERMA



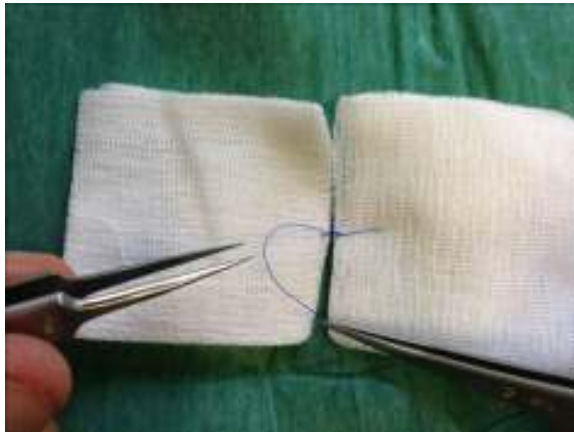
SECONDO NODO

IL FILO LUNGO SI ARROTOLA SULLA PINZA
VUOTA CHE SI APRE A PRENDERE LA CODA



TERZO NODO

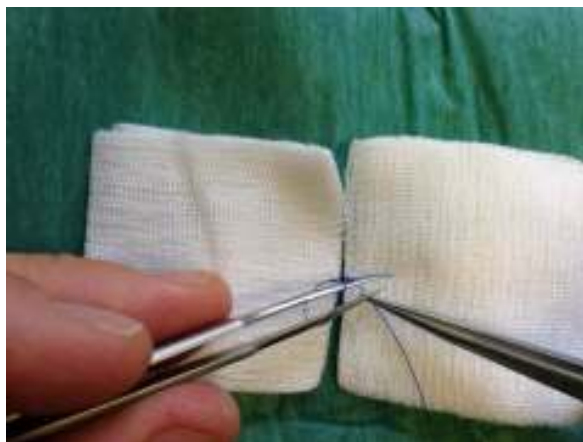
Invertire le mani



1. Impugnare il filo



2. loop



3. Impugnare la coda



4. tirare

Durante la fase “macro” verrà mostrato anche

COME MANEGGIARE L'AGO

COME RACCOGLIERE L'AGO (tre mosse)

GRS viene usato per insegnare e spiegare i

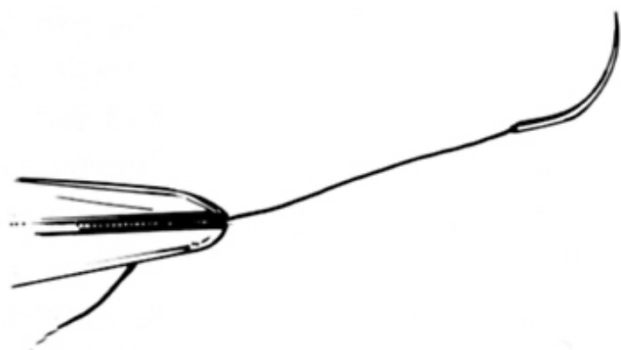
passaggi

è un

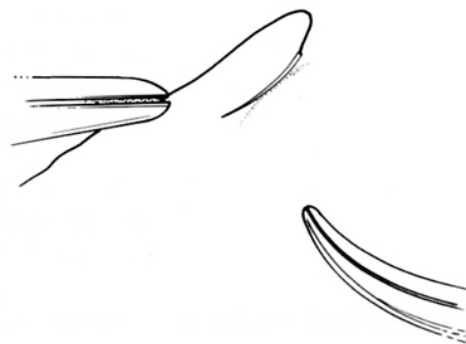
“PARTIAL” RATING SCOLRE

COME RACCOGLIERE L'AGO IN TRE MOSSE

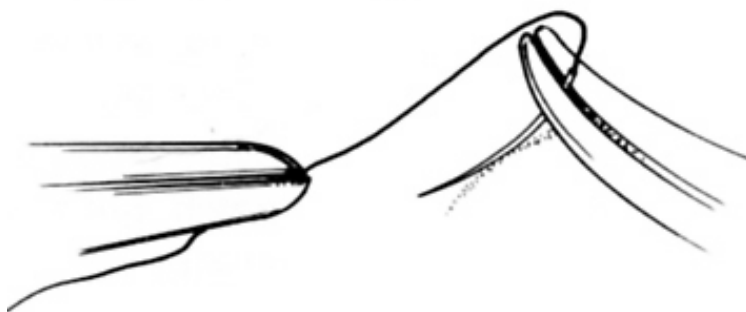
1



2

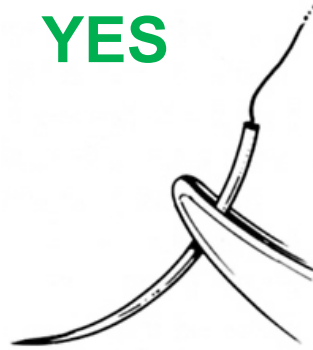


3



DOVE IMPUGNARE L'AGO

YES



NO



NO



PASSI FONDAMENTALI NELLA PROGRESSIONE DIDATTICA **MICRO**

INSEGNAMENTO AL MICROSCOPIO

NOZIONI DI OTTICA, STRUMENTARIO

POSIZIONAMENTO, VISIONE

CONCETTI DI ERGONOMIA AL MICROSCOPIO

Posizionamento e visione microchirurgica corretti (inizialmente visione singola, poi binoculare, ingrandimento massimo, mantenere sempre occhi su campo operatorio, etc)

PASSI FONDAMENTALI NELLA PROGRESSIONE DIDATTICA **MICRO**

PUNTI SU GARZA

PUNTI SU PIASTRA

PUNTI SU TUBO DI SILICONE

PUNTI SU COSCIA DI POLLO

PUNTI SU GARZA

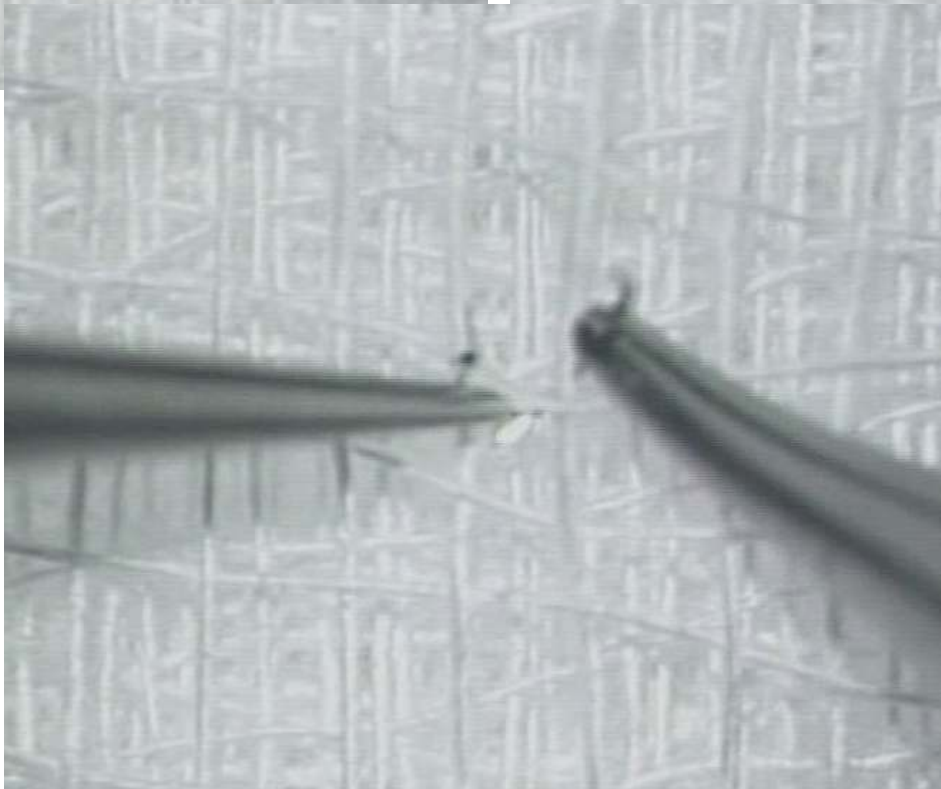
PRATICA SU GARZA CON FILO 8-0. FONDAMENTALE CODA
CORTA (1-2 RIQUADRI)

PRIMO ESERCIZIO:

**SUTURE IN 5 DIFFERENTI QUADRI DI UNA GARZA CON
INGRANDIMENTO MICROSCOPICO, PER OGNI RIQUADRO 3
NODI IN MAX 15" (STESSI ESERCIZI DI PRIMA)**



CODA CORTA



PER GLI INSEGNANTI

Prestare attenzione a:

Ergonomia e tremore, raccogliere l'ago in tre mosse, mantenere nodo piano, coda corta, ingradimento massimo durante il passaggio dell'ago, riduzione ingrandimento durante chiusura del nodo

Si veda GRS

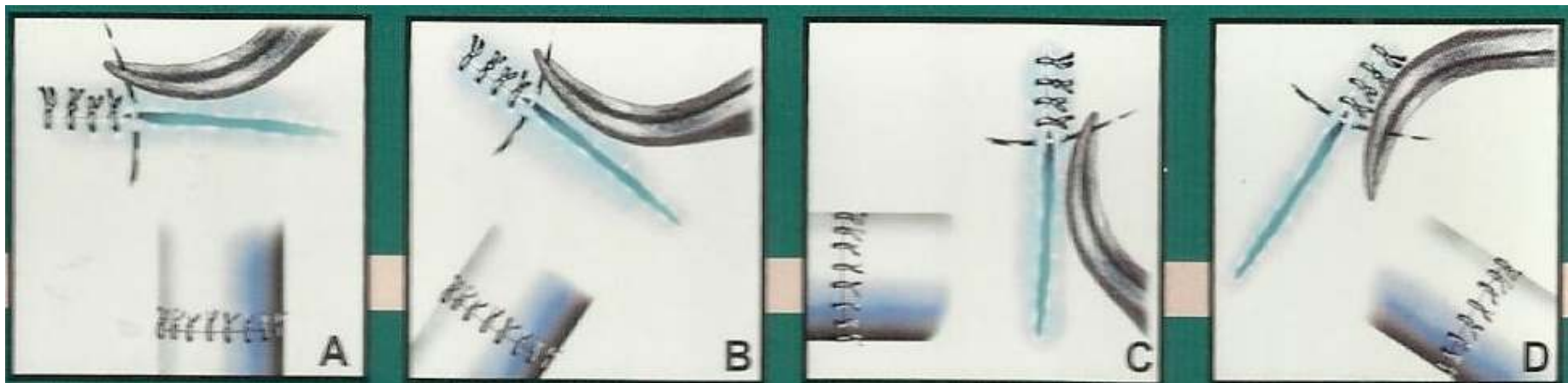
PUNTI SU GARZA

Requisiti minimi per step successivi:

lavorare su 5 differenti quadri di una garza sotto ingrandimento, per ogni quadro eseguire 3 nodi in max 15" e/o dopo decisione del tutor.

PUNTI SU PIASTRA

Eseguire le suture in 4 posizioni differenti
(-/\)



PUNTI SU PIASTRA

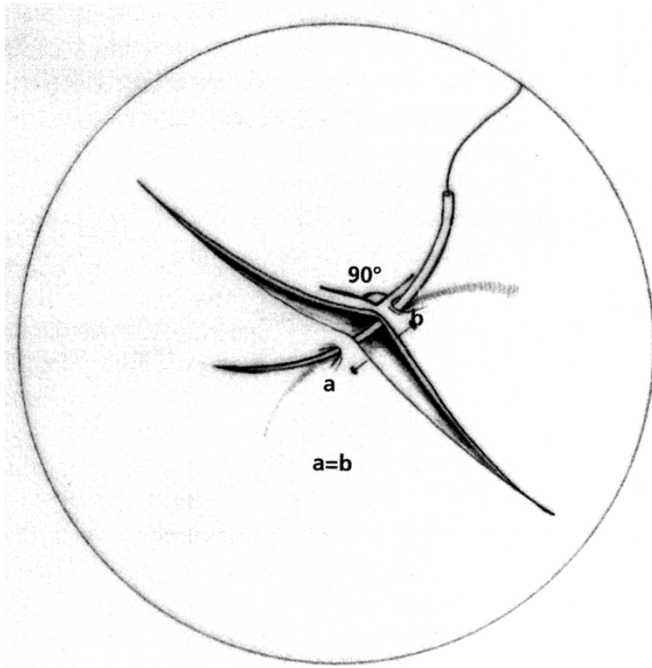
INFORMAZIONI PER IL DOCENTE

Focalizzare l'attenzione su:

**Perforazione del vaso, tensione del filo per
accostare i lembi, distribuzione dei punti.**

PUNTI SU PIASTRA

Distanza da bordo



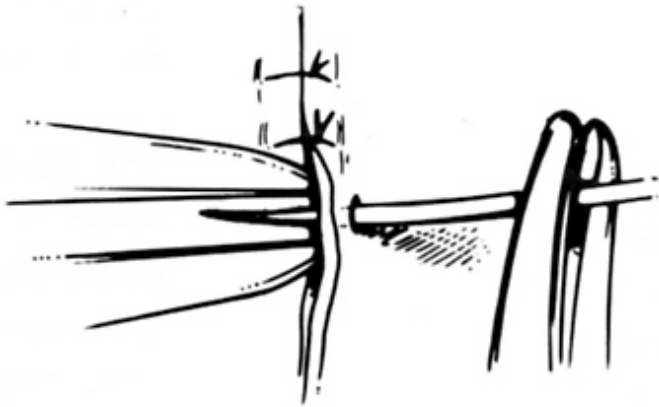
Distribuzione
dei punti



$a=b$ → 2 volte il diametro dell'ago

PUNTI SU PIASTRA

Come perforare la parete



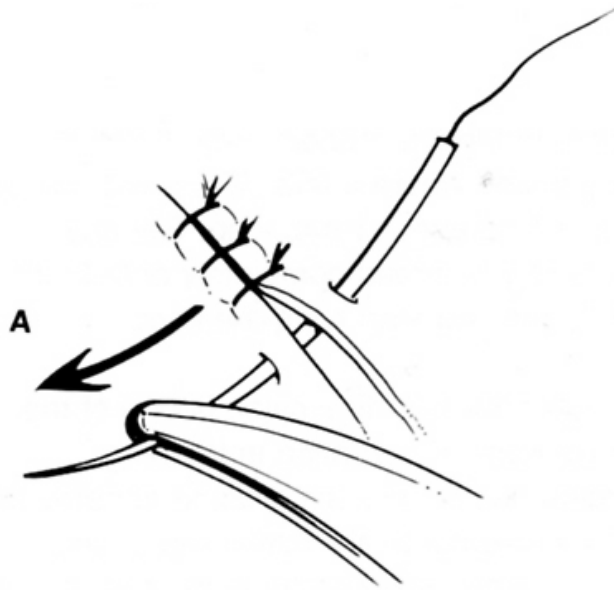
Come guidare l'ago



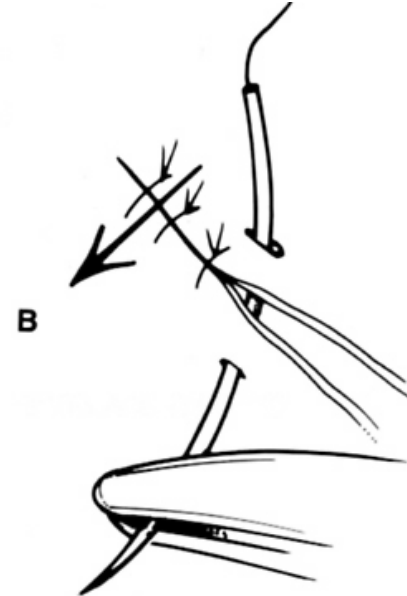
PUNTI SU PIASTRA

Come raccogliere l'ago

YES

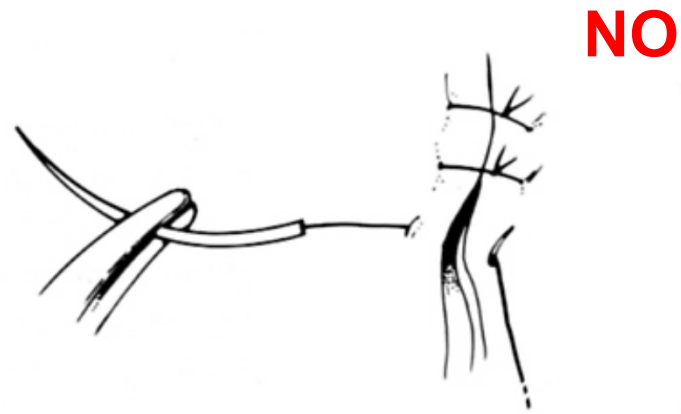
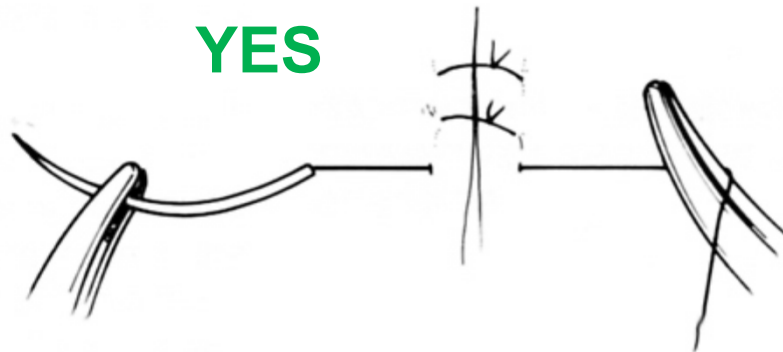


NO

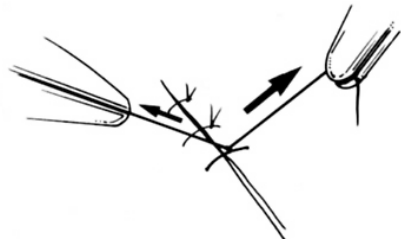


PUNTI SU PIASTRA

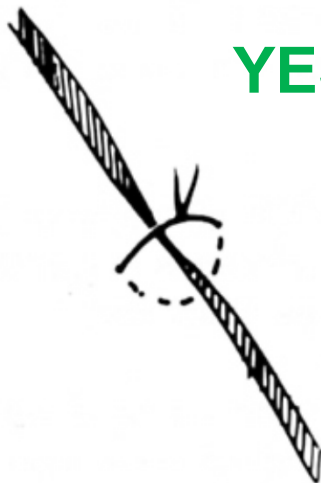
Recupero del filo



PUNTI SU PIASTRA



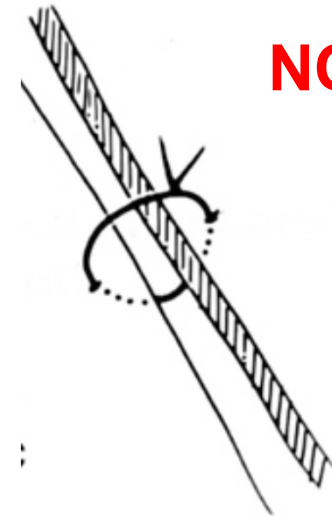
Regolare la tensione



YES



NO



NO

PUNTI SU PIASTRA

Requisiti minimi per passaggio a steps
successivi:

***8 punti in ogni posizione (3 nodi per punto)
e/o per decisione del tutor***

**Valutazione della qualità del punto dall'interno
del vaso (possibile - ALI score)**

PUNTI SU PIASTRA

ALI GHANEM
2014

Trainee:

Assessor:

Date:

Technique: bi-angulation / triangulation/ backwall/ other:



Error 1: Disruption of the anastomosis line



Error 2: Backwall or sidewall catch



Error 3: Oblique stitch causing distortion



Error 4: Bite leading to tissue infoldment



Error 5: Partial thickness stitch



Error 6: Unequal distancing of sutures



Error 7: Visible tear in vessel wall



Error 8: Strangulation of tissue edges



Error 9: Thread in lumen



Error 10: Large edge overlap

Anastomosis Lapses:

Error type:	Frequency:
Error 1:	
Error 2:	
Error 3:	
Error 4:	
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Error 6:	
Error 7:	
Error 8:	
Error 9:	
Error 10:	

Comments:

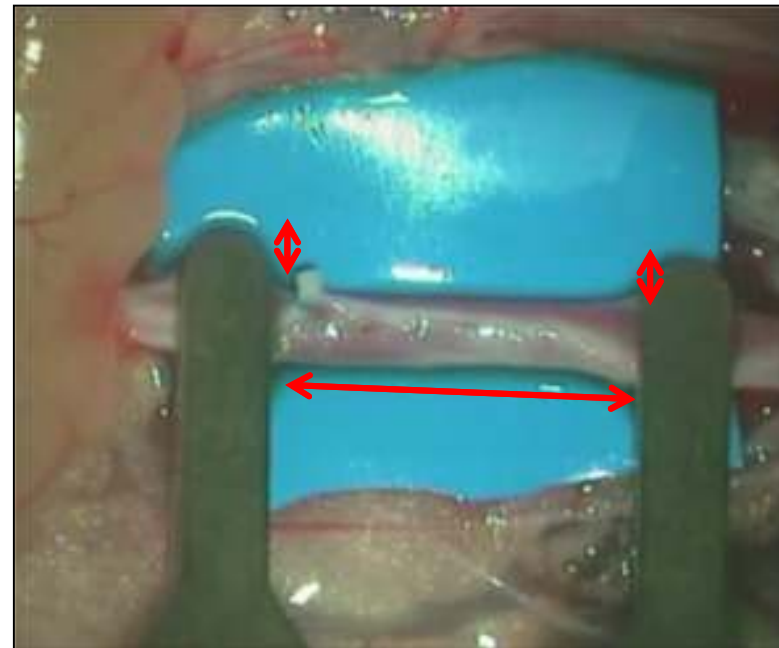
Anastomosis Laps Index Score:

Skill Level

Novice ALI > 6	Intermediate ALI 3-6	Expert ALI < 3
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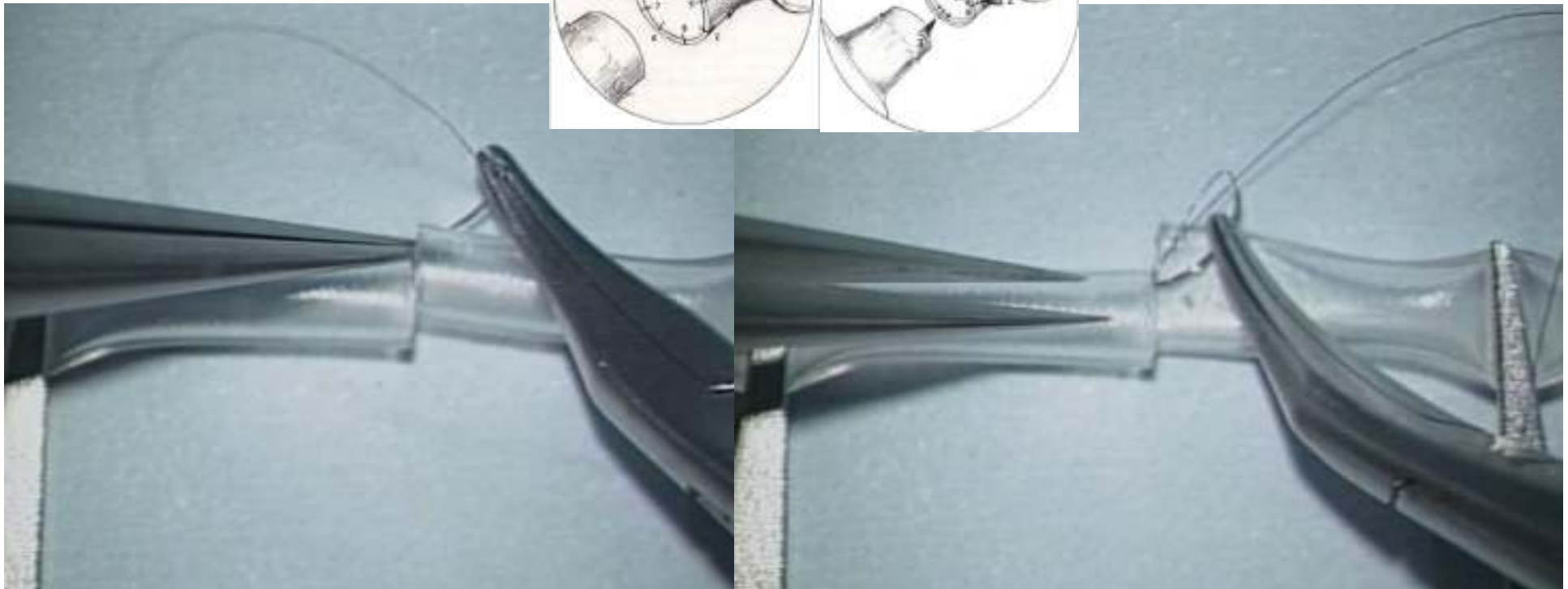
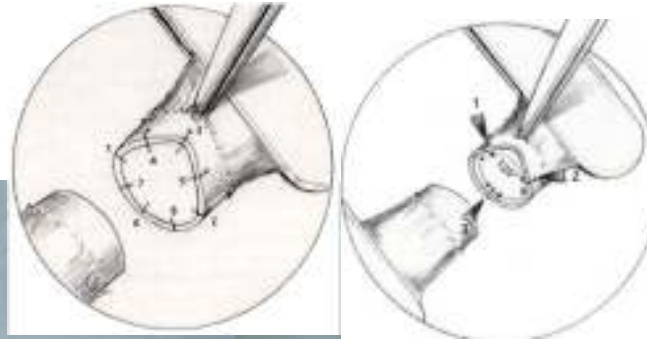
PUNTI SU TUBO DI SILICONE

Gestione e posizionamento
dell'approssimatore

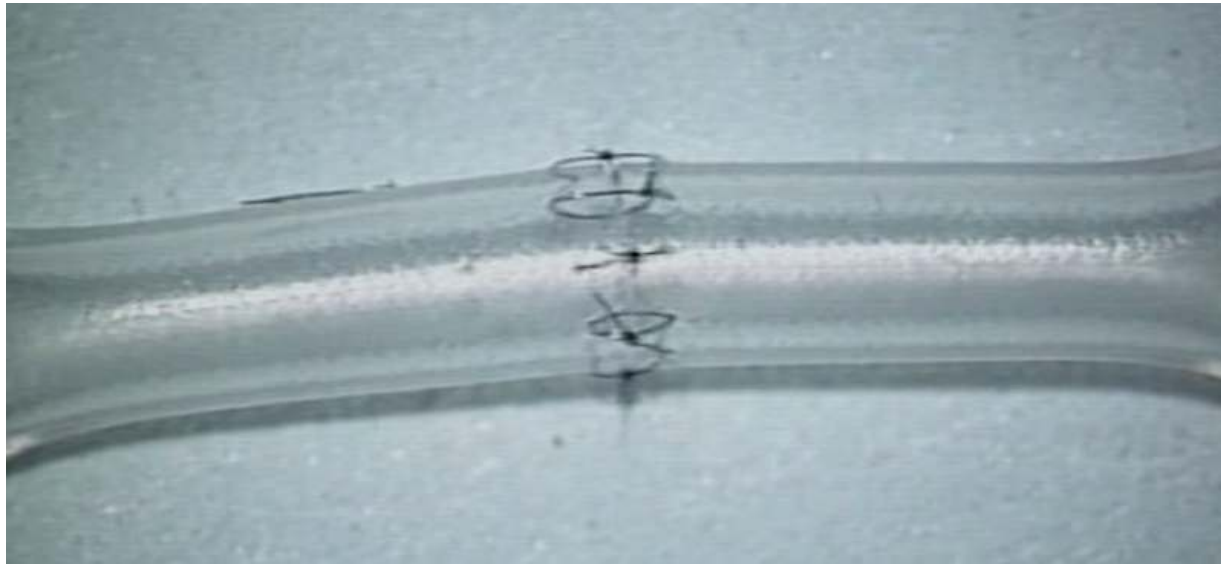


PUNTI SU TUBO DI SILICONE

Passaggio nella parete
Disposizione dei punti (180° o 60°)



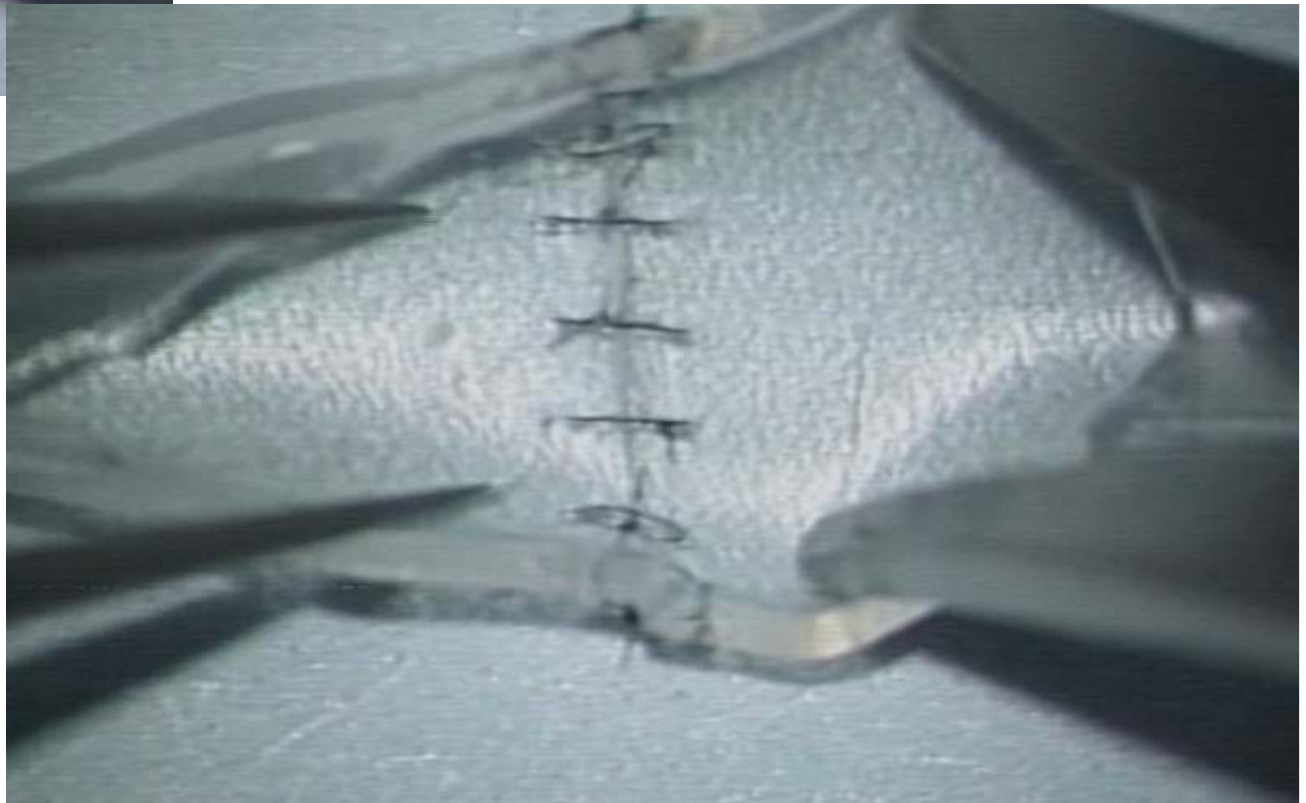
PUNTI SU TUBO DI SILICONE



Requisiti minimi per passaggio a steps successivi:

**Esercizio minimo: sutura completa di 2-3.
(16/24 punti).**

PUNTI SU TUBO DI SILICONE



PUNTI SU POLLO

Coscia e arto inferiore



PUNTI SU POLLO

Presentazione di differenti approcci ai vasi mediante video, successivamente lo studente eseguirà l'accesso.

Esercizio base:

Suture termino-terminali di arteria e vena femorale

PUNTI SU POLLO

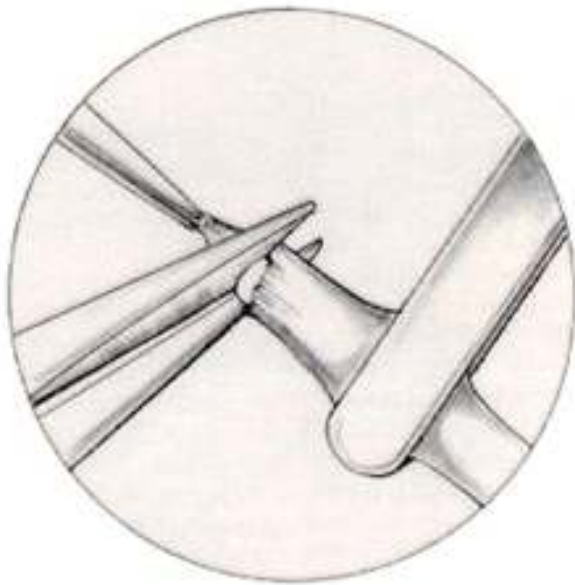
TECNICA DI DISSEZIONE

GESTIONE DEI TESSUTI...
GESTIONE DALL'AVVENTIZIA



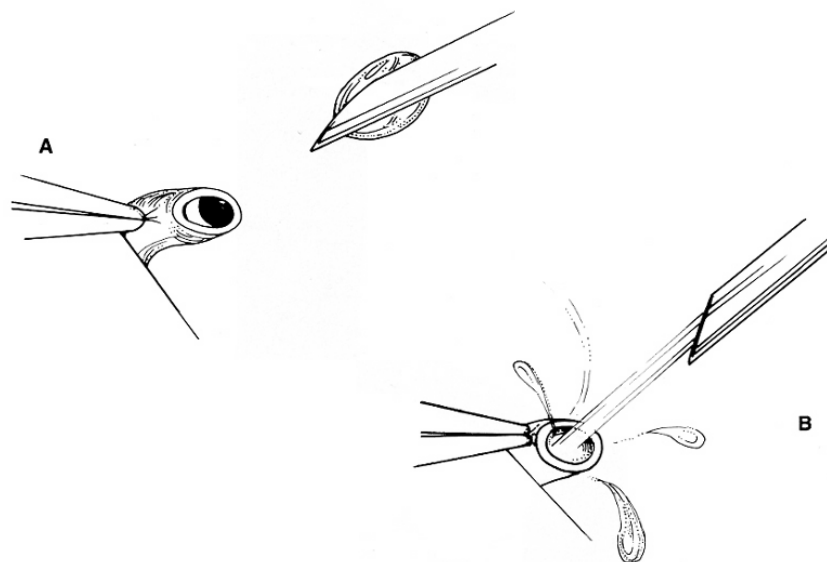
PUNTI SU POLLO

AVVENTIZIECTOMIA SFONDO

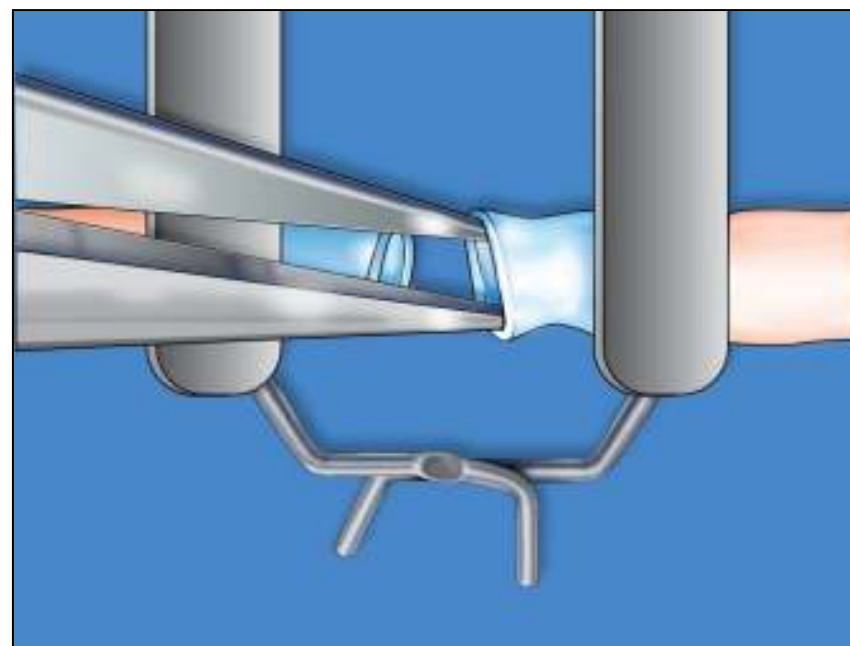


PUNTI SU POLLO

IRRIGAZIONE



DILATAZIONE



PUNTI SU POLLO

Valutazione primo esercizio con GRS modified
score
(Time 0)

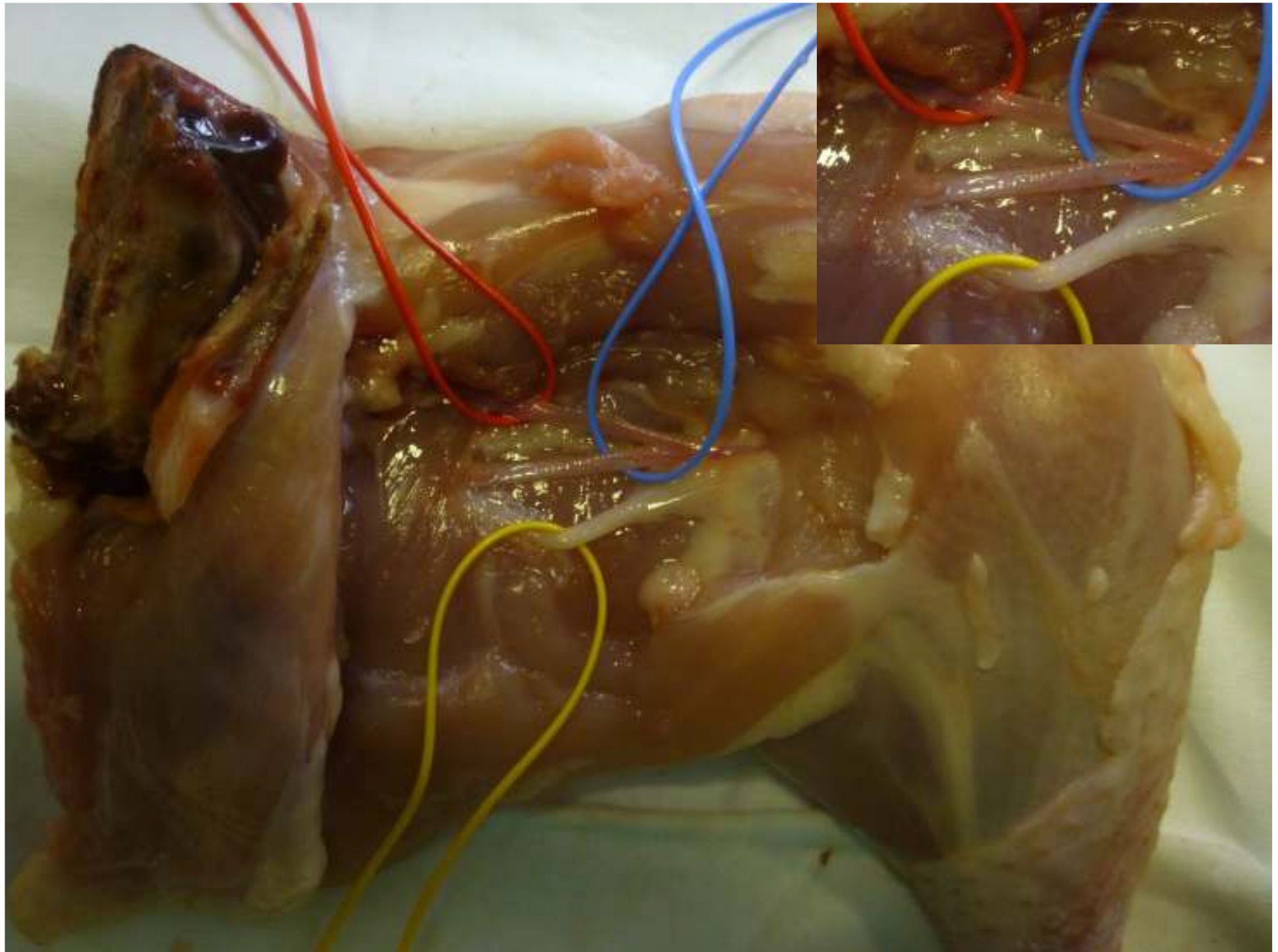
Valutazione di pervietà con fisiologica colorata

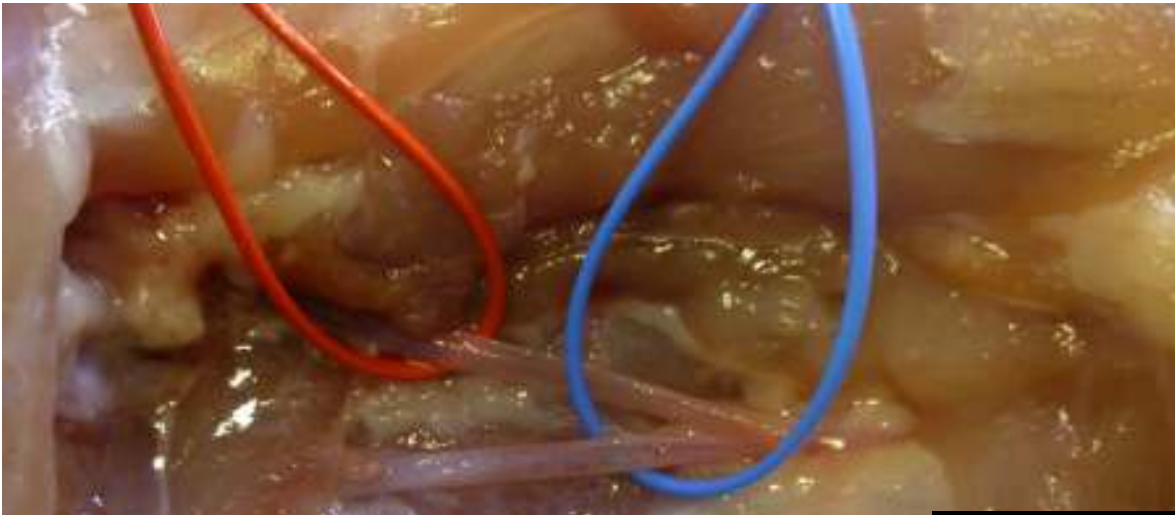
Giudizio aspetto interno sutura con ALI Score

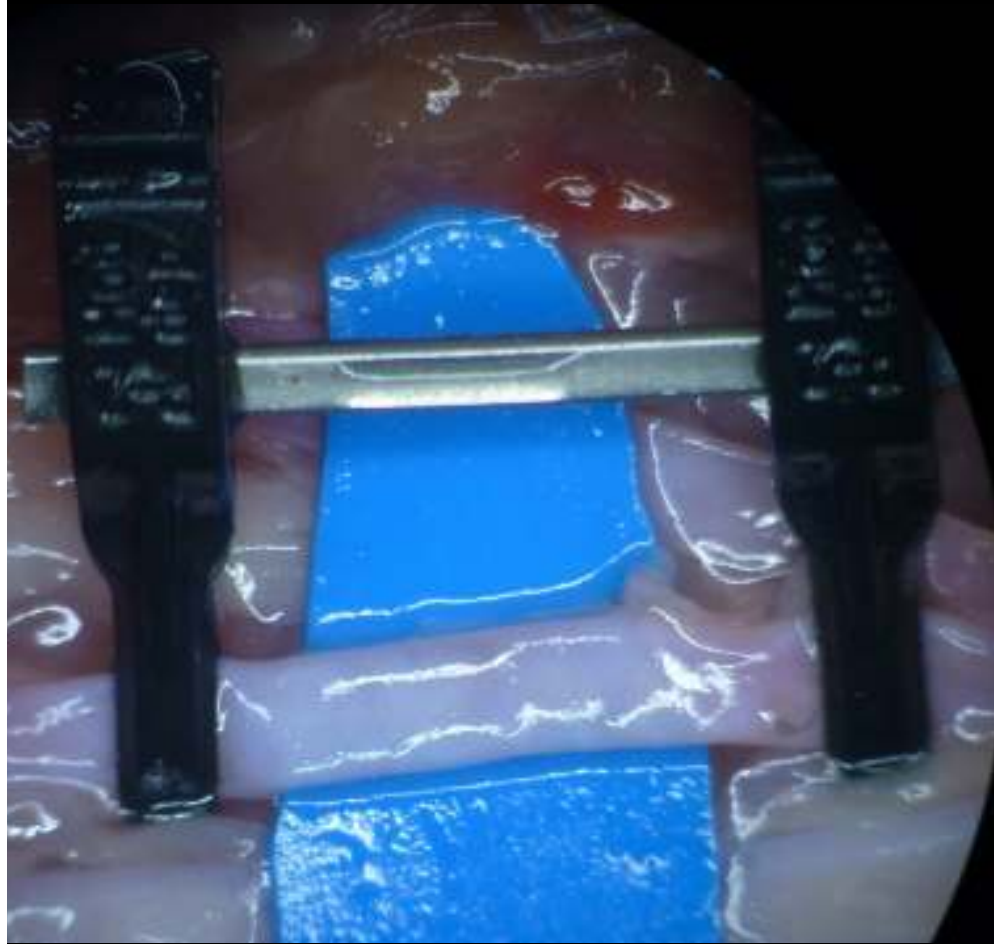
PUNTI SU POLLO

Requisito minimo per passaggio a step successivo:

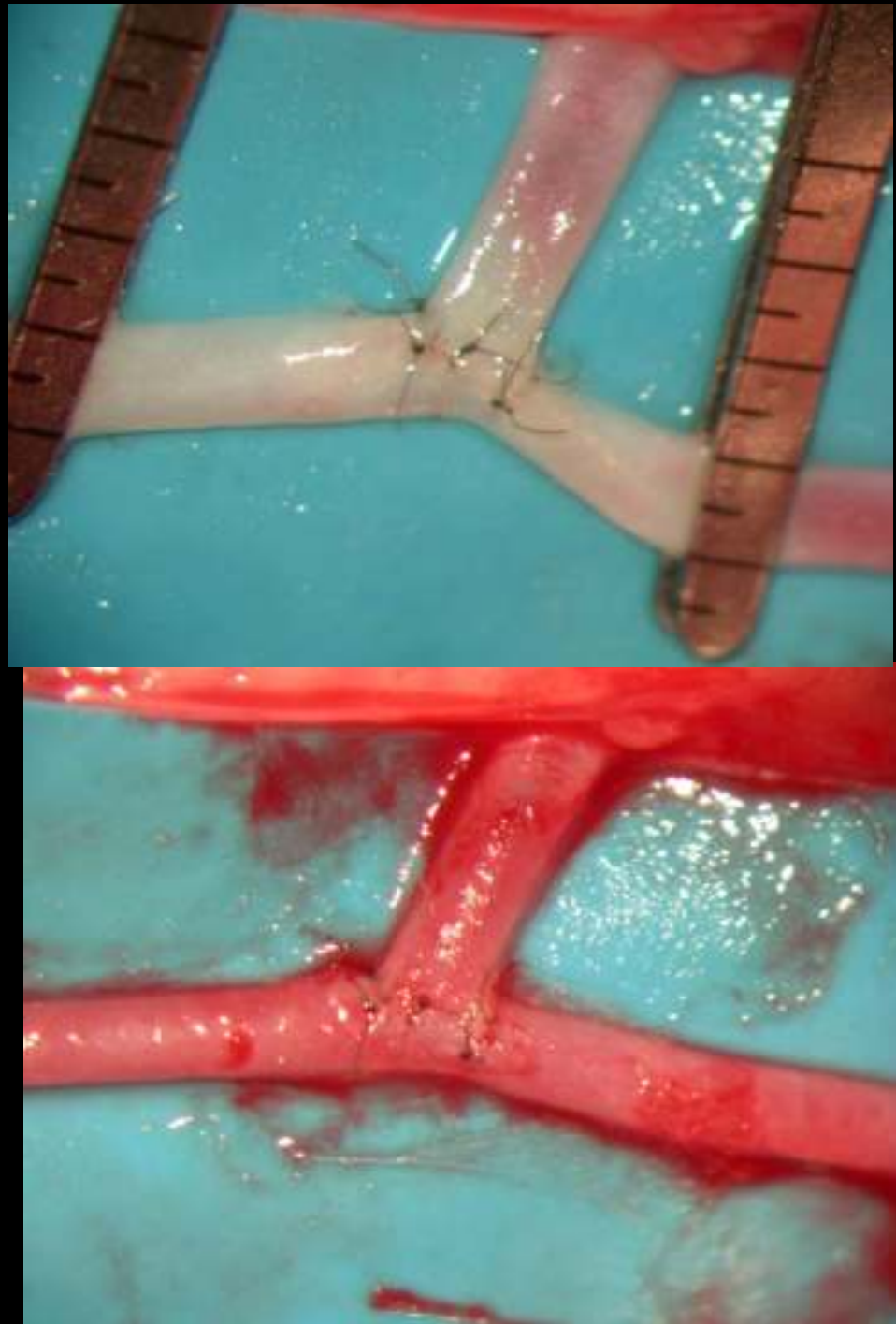
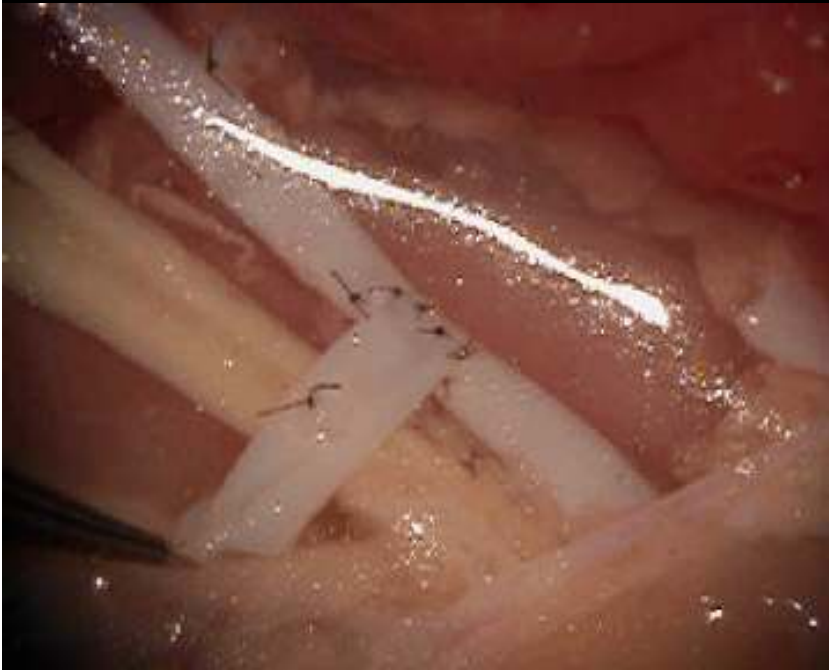
Completamento di 3-4 suture



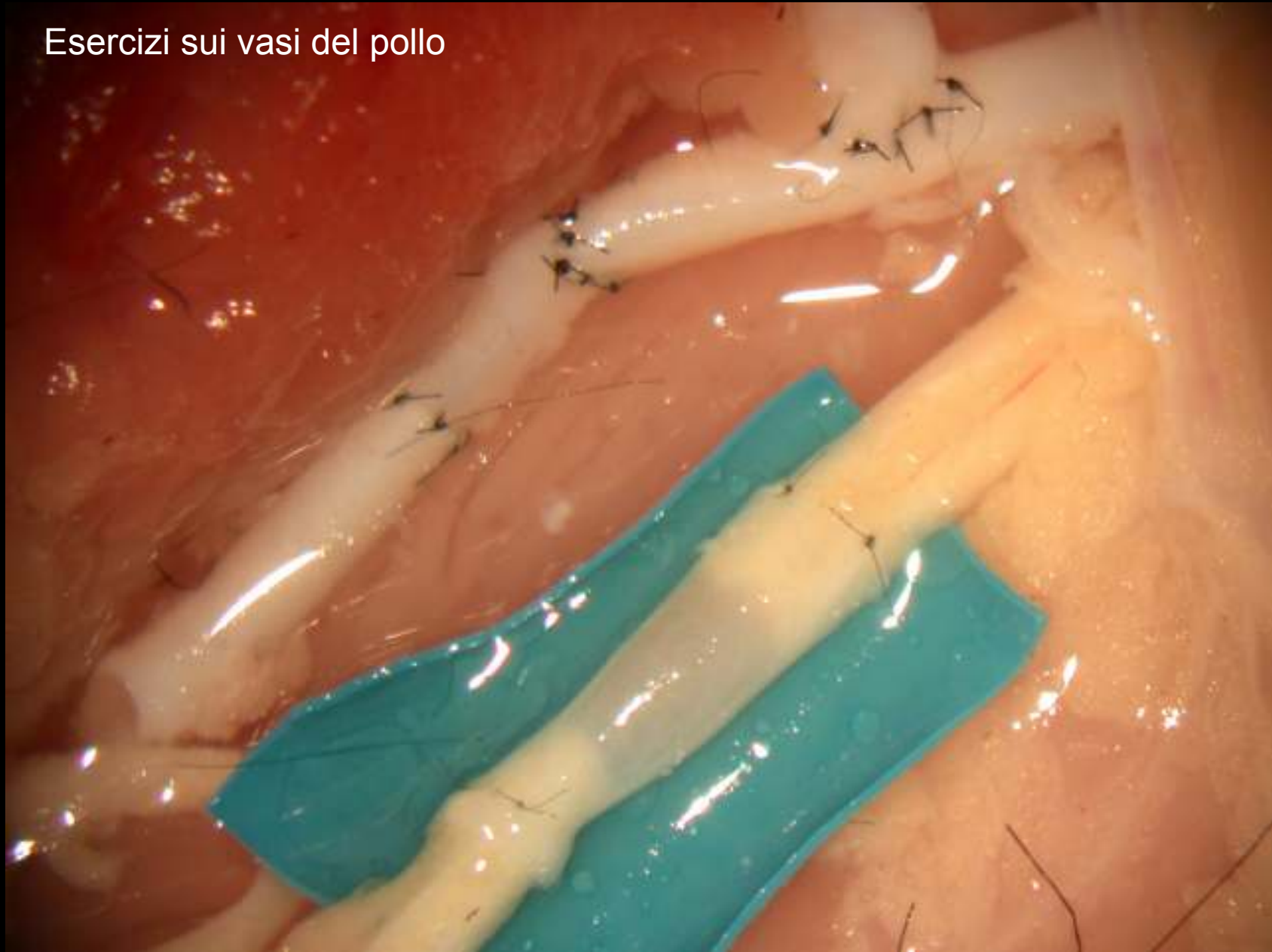




Sutura terminolaterale e
prova pervietà con liquido
colorato



Esercizi sui vasi del pollo



SECONDE 10 ORE

PASSI SUCCESSIVI

Ulteriori 10 ore su pollo
con altri esercizi:
TL, innesti venosi, suture
nervose, muscolo in vena
ecc



Pratica su
modello vivente



VALUTAZIONE FINALE - GRS

	1	2	3	4	5
<u>TEMPO E MOBILITÀ</u>	Molti movimenti inutili		Tempo adeguato, ma ancora molti movimenti		Movimenti minimi e massima efficienza
<u>GESTIONE STRUMENTI</u>	Plurimi tentativi infruttuosi di raccogliere gli strumenti		Uso adeguato degli strumenti, ma a tratti rigido		Movimento fluido
<u>GESTIONE FILO</u>	Frequente perdita, danno o rottura del filo		Occasionale perdita, danno o rottura del filo		Gestione continua e accurata del filo
<u>GESTIONE TESSUTI</u>	Impiega forza eccessiva nella gestione dei tessuti, danno dei tessuti		Gestione accurata dei tessuti con danni saltuari		Gestione accurata con danno minimo
<u>CAPACITÀ TECNICHE (ANASTOMOSI)</u>	Punti mal disposti e inadeguato uso di irrigazione		Sufficiente distribuzione dei punti e uso non adeguato di irrigazione		Punti ben disposti e irrigazione adeguata
<u>FLUSSO OPERATIVO</u>	Interruzioni frequenti e insicurezza nel gesto		Progressione adeguata della flusso operativo, pianificazione		Movimenti e pianificazione fluida del flusso operativo
<u>OUTCOME/PERV IETÀ</u>	Non pervio		Flusso debole		Flusso normale

Altri tipi di valutazione - GRS

GRS 3						
ID	Model					
Knot Tying	1	2	3	4	5	Score
Quality of the knot	Not square, loose, cut ends too long or too short		Partially square, somewhat loose, cut ends OK length		Square, snug, cut ends proper length	
Efficiency	Many wasted moves, regrasps multiple times, does not pull needle out of field		some waste moves, regrasps occasionally, sometimes pulls needle out of field		Not wasted moves, grasps once only, always pulls out of field	
Handling	Multiple passes, grasps tip of needle, does not bolster, pulls needle out on the curve		A few passes, sometimes grasps the tip, sometimes bolsters, sometimes pulls needle out on the curve		Single pass, never grasps the tip, always bolsters, always pulls needle out on the curve	
Anastomosis						
Preparation	Forgets background, Ends set up poorly in approximating clamp, forgets dilatation, no adventitial stripping		Rough dilatation, Excessive OR inadequate adventitial stripping		Background in place, approximating clamp applied correctly, gentle dilatation, clean adventitial stripping	
Suturing	Inaccurate needle placement, pulls needle through roughly, drops suture end OR inefficient knot tying, does not look inside lumen		Outer appearance inconsistent Or partially inverted, possible back wall stitch, suture ends intraluminal, suture spacing inconsistent		Smooth outer appearance, no back wall stitch, patent, all suture ends extraluminal, appropriate suture spacing	
Total Score						

A. PREPARATION



Forgets background				Background in place
Ends set up poorly in approximating clamp			Approximating clamp applied correctly	
Forgets dilatation		Rough dilatation		Gentle dilatation
No adventitial stripping	Excessive/inadequate adventitial stripping			Clean adventitial stripping

B. SUTURING



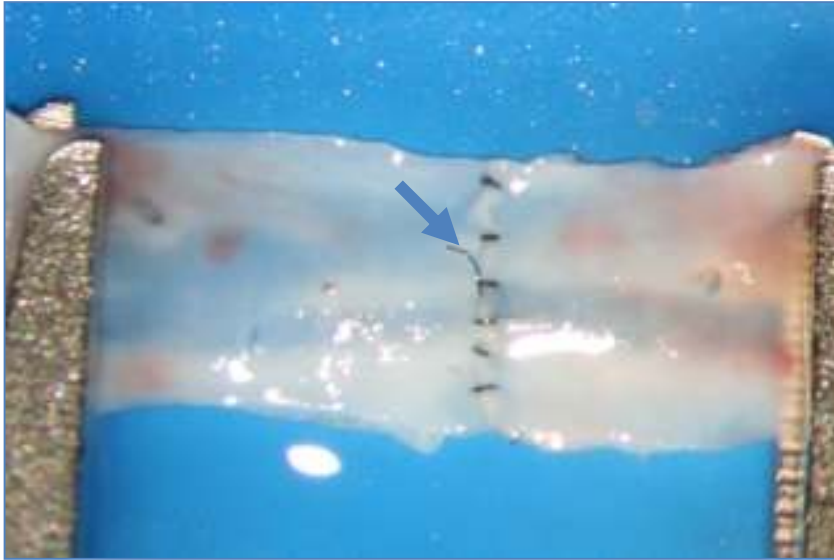
Inaccurate needle placement	Inconsistent needle placement	Accurate needle placement
Pulls needle through roughly	Rough/inconsistent needle passage	Takes needle out on curve
Drops suture end/inefficient knot tying	Knot tying loose/tight/inefficient	Efficient tying
Does not look inside lumen		Always checks inside lumen
Too much movement at anastomosis with tying		Anastomosis stays still with tying

C. FINAL PRODUCT



Rough outer appearance	Outer appearance inconsistent/partially inverted	Smooth outer appearance
Back wall stitch	Possible back wall stitch	No back wall stitch
Not patent		Patent
Suture ends intraluminal	Some suture ends intraluminal	All suture ends extraluminal
Poor suture spacing	Suture spacing inconsistent	Appropriate suture spacing

Valutazione del lume



Punteggio / valutazione del lume

ALI GHANEM
2014

Trainee: _____ Assessor: _____
Technique: bi-angulation / triangulation/ backwall/ other: _____

Date: _____



Error 1: Disruption of the anastomosis line



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Error 6: Unequal distancing of sutures



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Comments: _____

Anastomosis Laps Index Score: _____

Skill Level

Novice ALI > 6	Intermediate ALI 3-6	Expert ALI < 3
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2014-2015**

P Tos – F Moschella

**R Baraziol
I Marcoccio
M Pignatti
M Schiavon
S D'Arpa**

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Cordinatore - R Baraziol**

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