

Thrombus extension after cyanoacrylate closure (TEACAC) vs endovenous glue induced thrombosis (EGIT) What is the difference?



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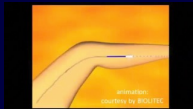
Disclosure

- No disclosure

Endovenous treatment

- TT (Thermal, Tumescant)
 - EVLA
 - RFA
 - Steam
- NTNT (Non Thermal, Non Tumescant)
 - MOCA
 - **Glue**
 - UGFS

Laser



RFA



MOCA



GLUE

Benefit of Glue

- No risk of nerve injury
- No need for tumescent anesthesia
- No need for compression after treatment



Complications of Glue

- Hypersensitivity reaction (HSR)
- Glue granuloma



Endovenous glue -induced thrombosis (EGIT)

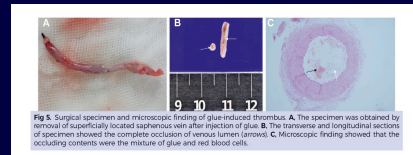


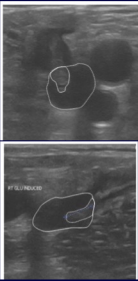
Fig 5. Surgical specimen and microscopic finding of glue-induced thrombosis. A. The specimen was obtained by removal of superficially located saphenous vein after injection of glue. B. The transverse and longitudinal sections of specimen showed the complete occlusion of venous lumen (arrows). C. Microscopic finding showed that the occluding contents were the mixture of glue and red blood cells.

EGIT = Glue extension + blood cell

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EGIT

- Incidence 5.8%
- Risk factor : Vein diameter < 5 mm
- EGIT displays more echogenicity on U/S
- Occur immediate postoperative
- Less regression
- No consensus guidelines exist for the treatment of EGIT after CAC



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EGIT : clinical course

No.	Sex/Age, years	Vein	EGIT type	Treatment	Progress
1	F/48	SSV	II	None	Regression at 156 days
2	F/44	CSV	II	None	No change, no symptoms
3	F/72	CSV	II	None	Regression at 18 days
4	M/59	CSV	I	None	No change, no symptoms
5	F/56	SSV	I	None	Regression at 76 days
6	M/59	CSV	I	None	No change, no symptoms
7	F/57	CSV	I	None	Regression at 115 days
8	M/48	CSV	I	None	Regression at 34 days
9	M/69	SSV	I	None	Regression at 61 days
10	M/56	CSV	II	None	Regression at 108 days
11	M/70	CSV	I	None	Regression at 72 days

EGIT, Endovenous glue-induced thrombosis; CSV, great saphenous vein; SSV, small saphenous vein.

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EGIT

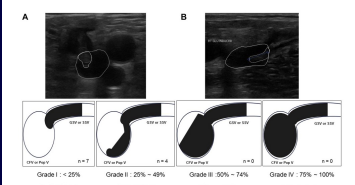
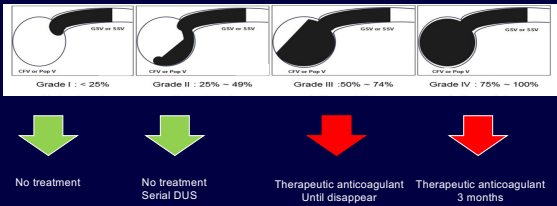


Fig 4. Classification of the endovenous glue-induced thrombosis (EGIT) (A and B). The EGIT was classified as the glue-occupied area in the deep vein total area of deep vein (dotted circle) and glue-occupied area (bold circle). CSV: Common femoral vein; GSV: great saphenous vein; SSV: small saphenous vein.

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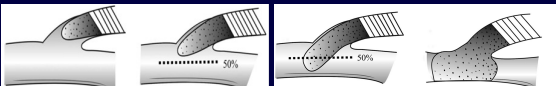
EGIT



No treatment
No treatment
Serial DUS
Therapeutic anticoagulant
Until disappear
Therapeutic anticoagulant
3 months

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Thrombus extension after CAC (TEACAC)



"Pure thrombus" , No Glue component

- Incidence 4.9%
- Occur after operation
- Easy regression
- Response well with anticoagulant
- Risk factor ?

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TEACAC

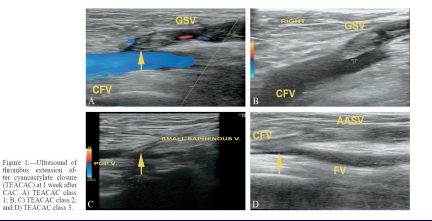


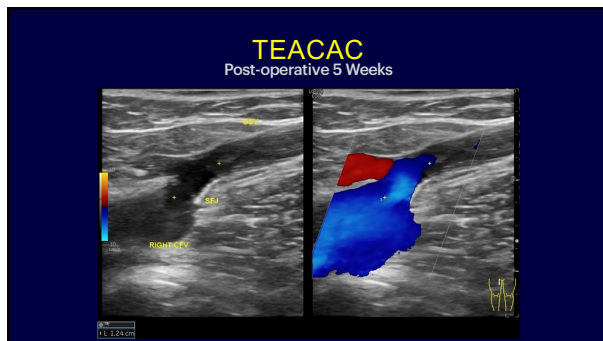
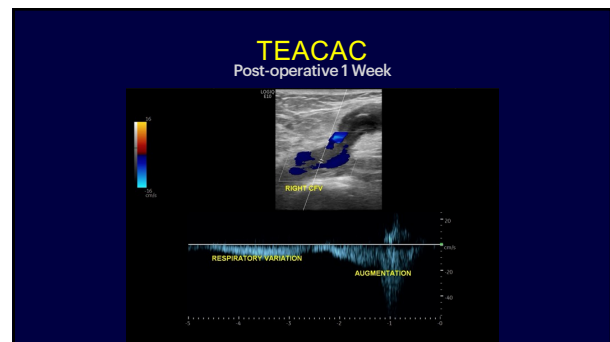
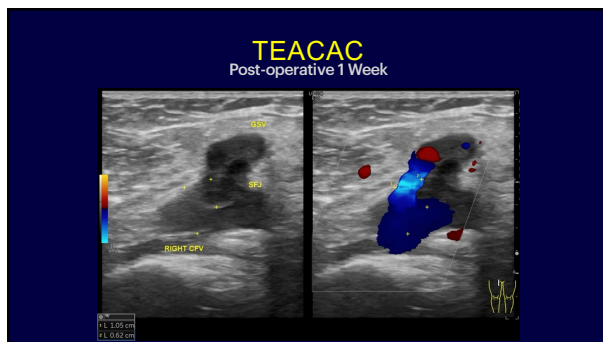
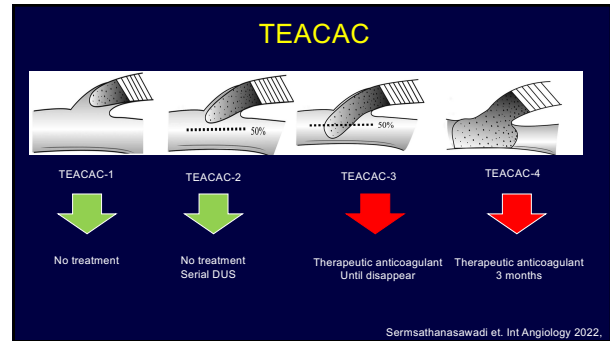
Figure 1.—Ultrasound of thrombus extension after TEACAC at 1 week after CAC. A: TEACAC class I; B: C: TEACAC class 2; and D: TEACAC class 3.

Sermathanasawadi et al, International Angiology 2022 April;4(2):143-8

TEACAC

No.	Gender/age (yrs)	Vein	Vein diameter (mm)	TEACAC class	Onset of TEACAC after CAC	Treatment for TEACAC	TEACAC resolved
1	F/72	GSV	7.9	1	1 week	Observation	2 weeks
2	F/73	GSV	8.7	1	1 week	Observation	2 weeks
3	F/65	GSV	11.8	2	1 week	Observation	2 weeks
4	M/61	SSV	4.6	3	1 week	Rivaroxaban	4 weeks
5	F/75	AASV	7.5	3	1 week	Dabigatran	2 weeks

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EGIT vs. TEACAC

	EGIT	TEACAC
Incidence	5.8%	4.9%
Component	Glue+Thrombus	Only Thrombus
Onset	Immediately after glue injection	Later
Spontaneous regression	No change/ Less regression	Easy regression
Response with anticoagulant	No change/ Less	Well
Risk factor	vein size < 5 mm	Unknown

Sermathanasawadi et. Int Angiology 2022
Chen et al. IVSVI 2020

Take home message

- TEACAC and EGIT are different complications of CAC
- TEACAC does not occur immediately after the operation
- TEACAC is easy to regression
- TEACAC responds well to anticoagulant
- Risk factor of TEACAC is still unknown.
- Patients should be informed about TEACAC before operation

Thank you for your attention

