

Vascular complications and free flap salvage in head and neck reconstructive surgery: Analysis of 150 cases of reexploration

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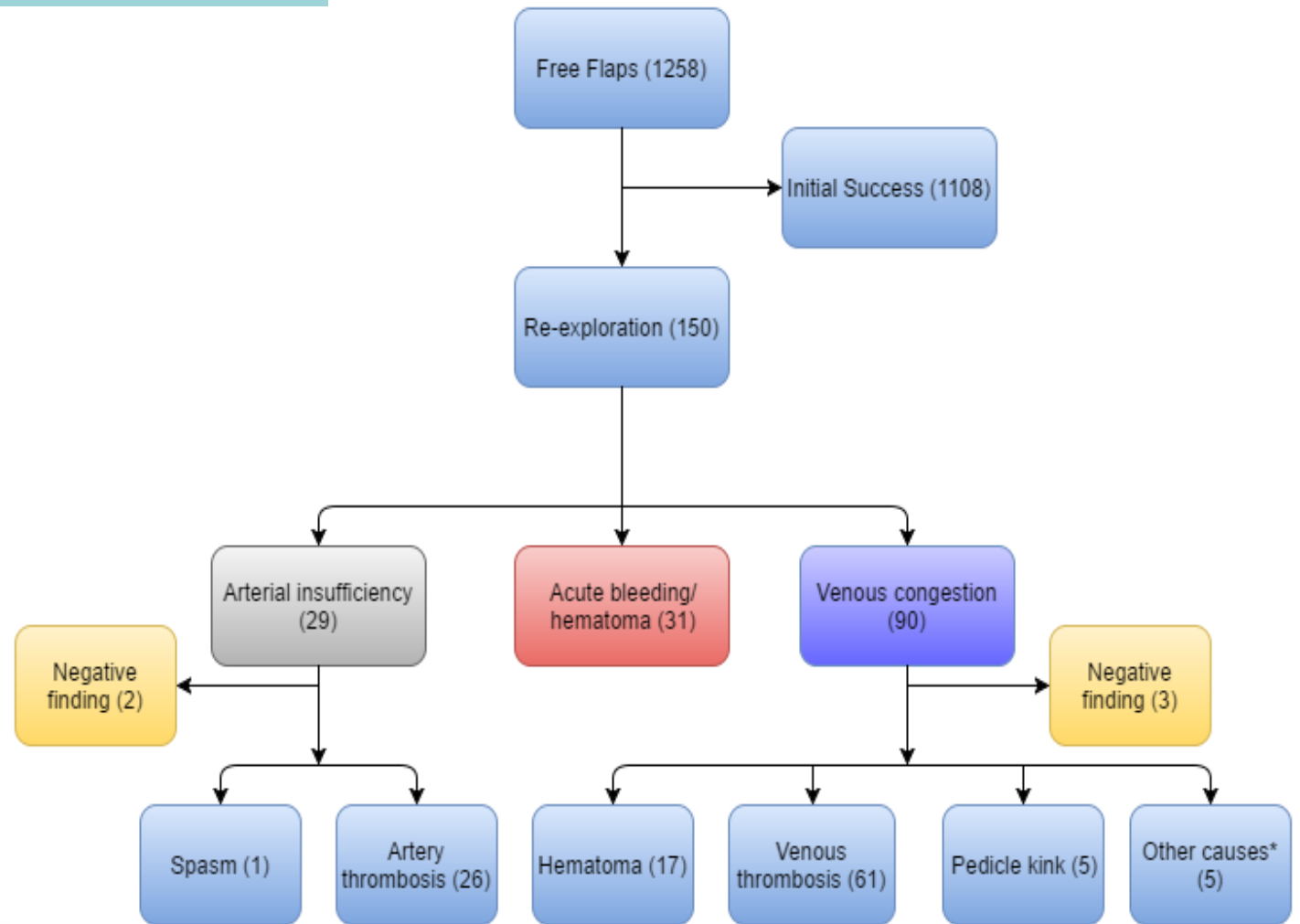
Purpose: to share our experience of reexploration and describe operative standard dealing with vascular thrombosis.

Materials and Methods

- Retrospectively reviewed 1258 free flaps
- 2002 to 2015
- All patients who underwent emergent reexploration within 14 days
- Indication : acute bleeding/hematoma, arterial insufficiency and venous congestion



Algorithm of patient selection



*Including sialoceles (1), flap compression (1), omohyoid muscle compression (1) and mandible compression (2)



Distribution in free flap types

	Total Number	Reexploration	Reexploration (%)	Salvage rate (%)
Overall	1258	150	11.9	59.7
Anterolateral Thigh				
Radial Forearm	508	53	10.4	59.2
Fibular	390	43	11.0	78.2
	352	50	14.2	50
Jejunum	8	3	37.5	66.6

Thrombosis rate, salvage rate, and flap success rate in recent large studies

Study	Year of study	Reconstruction area	Flap numbers	Thrombosis numbers (A/V)	Thrombosis rate	Salvage number	Salvage rate	Success rate
Chen 2007 ⁵	1999–2003	H & N	1142	113	9.9	72	63.7	96.4
Bui 2007 ⁶	1991–2002	All	1193	38 (10/28)	3.2	24	58.3	98.8
Roan 2008 ⁷	1997–2006	H & N	642	NA	9.9	NA	56	95.6
Yoshimoto 2009 ⁸	2000–2007	H & N	1031	59 (17/19)	5.7	9	15.3	95.2
Chang et 2011 ⁹	1991–2010	Breast	NA	74(43/26/5)	NA	66	89	NA
Ho 2012 ¹⁰	1992–2009	H & N	1278	50 (9/41)	3.9	34	68	95
Chiu 2016	2002–2015	H & N	1258	87 (26/61)	6.9	53	60.9	96.7

NA: not applicable

5. *Plast Reconstr Surg* 2007;120:187–95.

6. *Plast Reconstr Surg* 2007;119:2092-2100.

7. *The Journal of plastic surgical association R.O.C.* 2010;19:199-208

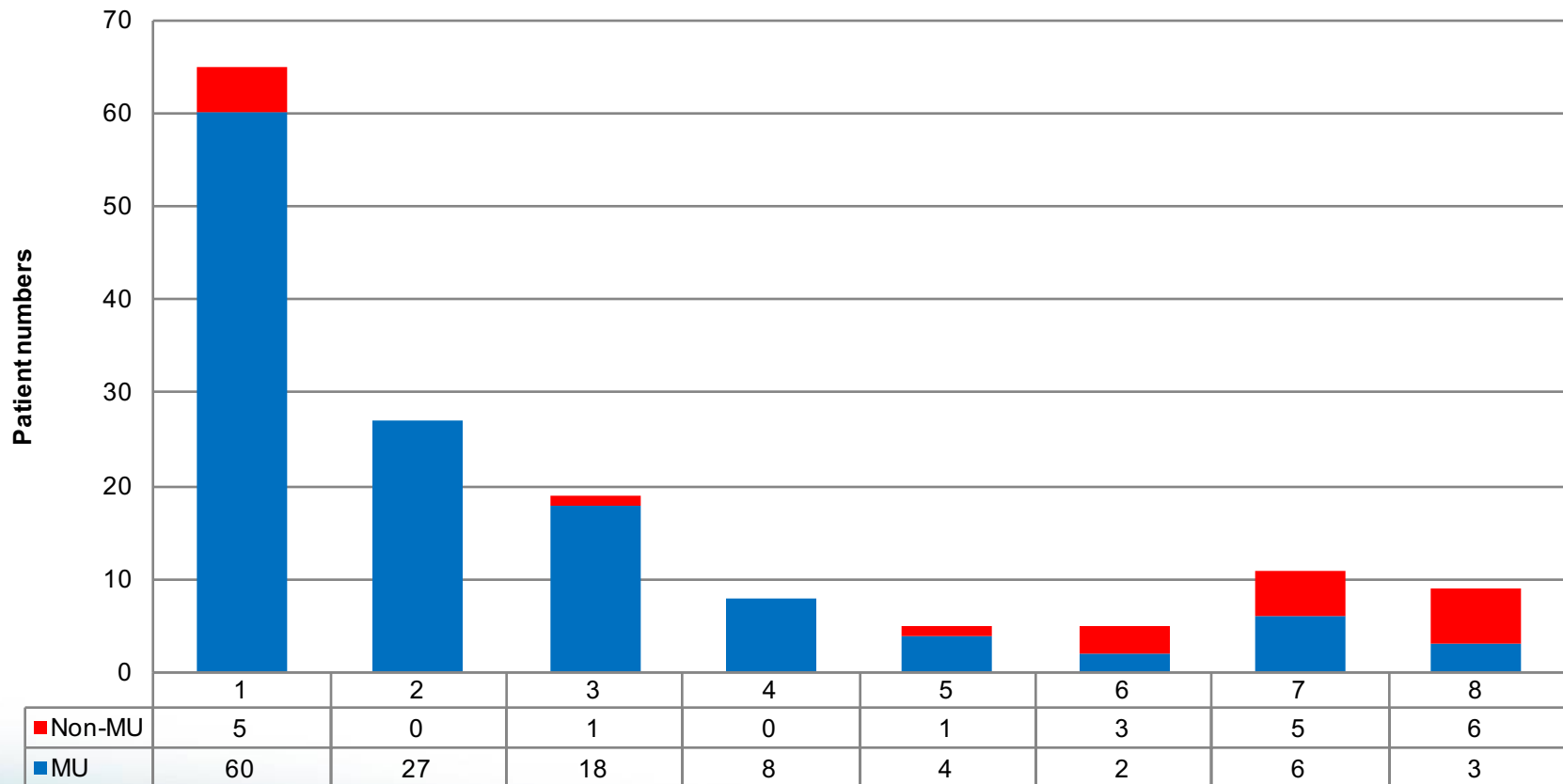
8. *Auris Nasus Larynx* 2010;37:205-211.

9. *Microsurgery* 2011;31:505-509.

10. *Br J Oral Maxillofac Surg* 2012;50:13-18.

Timing for reexploration in different care unit

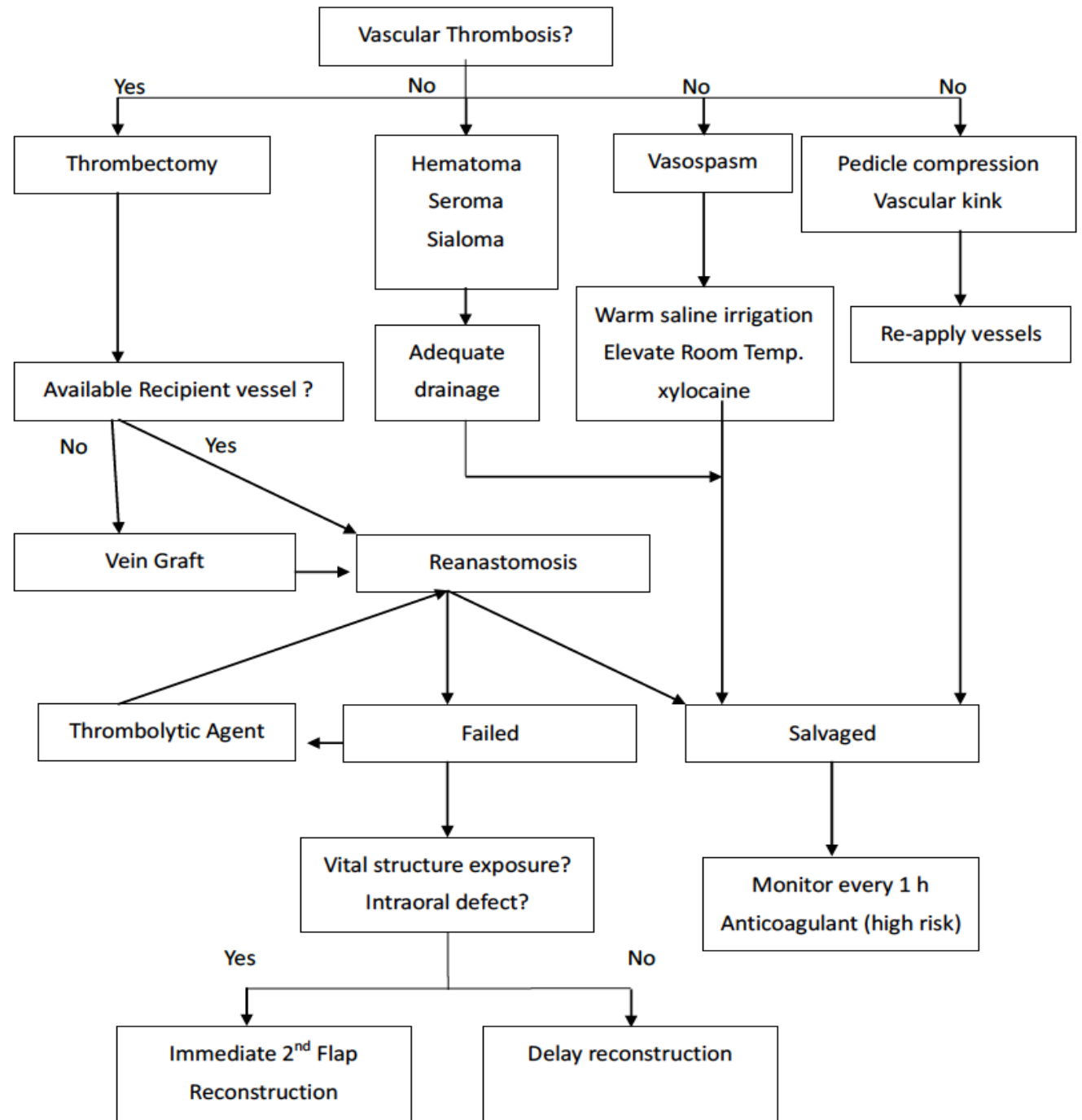
Postoperative Day



MU stands for microsurgical unit. Non-MU stands for general intensive care unit or general ward.

Day 8 stands for the summary of explorations after one week.

Suggested Algorithm of vascular thrombosis management



Conclusions

- Vascular thrombosis is a major contributing factor in flap loss
- Improvement in learning curve of surgical technique
- Perioperative management
- Stringent clinical models of flap monitoring
- Early detection by well-trained staff , Early salvage

