

Ari Gilmore, MD;
Gary Kelsberg, MD;
Sarah Safranek, MLS

Valley Family Medicine,
Renton, Wash (Drs. Gilmore
and Kelsberg); and University
of Washington Health Sciences
Library, Seattle (Ms. Safranek)



Simple surgical excision is associated with a low risk of recurrence but often leaves a visible scar.

Q/What's the best treatment for pyogenic granuloma?

EVIDENCE-BASED ANSWER

A IT'S DIFFICULT TO SAY which treatment is best, since most studies don't compare treatments directly. Pros and cons vary. Simple surgical excision is associated with a low risk of recurrence, but often leaves a visible scar. Curettage or shave excision, with cautery, is more likely to succeed in 1 session than cryotherapy; both may leave a smaller scar than surgery. Laser

therapy, which may require multiple sessions, and sclerotherapy may be least likely to cause visible scarring (strength of recommendation [SOR]: C, small cohort studies and case series).

Untreated pyogenic granulomas regress spontaneously within 6 to 18 months with some risk of scarring (SOR: C, a subset of patients in a retrospective cohort study).

Evidence summary

Little evidence directly compares treatments for pyogenic granuloma. Most studies examine multiple treatment methods without comparing results statistically, combine data from adults and children, or comprise case series using a single treatment method. The **TABLE** summarizes outcomes for different therapies.

Surgical excision: Low recurrence, but scarring is common

A retrospective cohort study audited recurrence rates in 408 patients (mean age 41 years, range 5 months to 90 years) whose pyogenic granulomas were treated with either surgical excision or combinations of curettage, shave, and cautery.¹ Investigators identified cases of histopathologically confirmed pyogenic granuloma over a 10-year period from a hospital database. Thirty-six percent of granulomas were located on the head and neck, 33% on the arm, 15% on the trunk, and 8% on the leg.

Of 326 lesions treated with surgical excision, 4 (3.7%) recurred. The overall recurrence rate was 10.3% for 82 lesions removed by com-

binations of curettage, shave, and cautery (the lesions weren't differentiated by removal method or location). Investigators didn't report on residual scarring with any method. However, expert opinion states that surgical excision often results in a conspicuous linear scar.²

Surgery vs laser therapy or no treatment

Another retrospective cohort study described treatment, recurrence rate, residual scarring, and patient satisfaction in 76 patients with pyogenic granuloma (mean age 6 years; range 4 months to 17 years). Outcomes were assessed by telephone follow-up.³

Fifty-eight lesions were removed by surgical excision and cautery with no recurrences (55% of patients had subtle scarring). Nine lesions were treated with pulsed dye laser (33% recurrence, 44% subtle scarring); 3 lesions were removed by CO₂ laser (100% recurrence, 33% subtle scarring). Four patients were followed but not treated (no explanation given); all untreated pyogenic granulomas disappeared spontaneously within 6 to 18 months with no recurrences; 1 patient had subtle scarring.

TABLE

How treatment outcomes for pyogenic granuloma compare

Treatment	Studies	Total patients	Treatment sessions	Recurrence	Scarring
Surgical excision	2 retrospective cohort studies ^{1,3}	384	1	0%-3.7%	55%
Curettage or shave excision with cauterization	1 retrospective cohort study, ¹ 1 prospective cohort study ⁴	118	1-2 (average 1.03)	10%	31%
Cryotherapy	1 prospective cohort study, ⁴ 1 case series ⁵	175	1-3 (average 1.5)	Unknown	42%
CO ₂ laser	1 retrospective cohort study, ³ 1 case series ⁶	103	1	2%-100%	12%-33%
Pulsed dye laser	1 retrospective cohort study, ³ 1 case series ⁷	31	1-6 (average 2.25)	9%-33%	9%-44%
Sclerotherapy	1 case series ²	9	1	0%	"Inconspicuous"
Expectant management	1 retrospective cohort study ³	4	None	0%	25%

Cryotherapy may require more treatments than curettage

A prospective trial randomized 89 patients (mean age 34 years; range 11-88 years) with pyogenic granulomas that were 1.5 cm or smaller to receive either curettage or cryotherapy, then evaluated the number of treatments required and whether scarring occurred. Follow-up was 85%.⁴

A single curettage resolved pyogenic granuloma in 35 of 36 patients (97%); 9 of the 36 patients (31%) had residual scarring. Twenty-five of 40 pyogenic granulomas (63%) responded to 1 cryotherapy treatment, 13 lesions (32%) resolved after 2 treatments, and 2 (5%) resolved after 3 treatments; 17 of the 40 patients (42.5%) had a residual scar. Curettage required fewer treatments overall than cryotherapy ($P < .001$), but no significant difference in residual scarring was noted between the 2 treatments.

A case series reported on 135 patients (mean age 26 years; range 4 months to 70 years) whose pyogenic granulomas were treated with cryotherapy.⁵ Seventy-eight (58%) had complete resolution with 1 session, 30% needed 2 sessions, 8% needed 3 sessions, and 5% needed 4 sessions (mean 1.58 sessions). Ninety-four percent had an excellent cosmetic result (including 12% with a small flat scar); 5% had residual hypopigmentation.

CO₂ laser usually removes lesions in 1 session

Another case series of 100 patients (mean age 27 years; range 6 months to 84 years) treated with CO₂ laser reported that the pyogenic granuloma was removed completely in 1 session in 98 patients. Twelve percent of patients had visible scarring and another 10% had slight textural skin changes. All patients reported satisfaction with the results.⁶

Pulsed dye laser works for small lesions

A case series of 22 patients (mean age 3.4 years; range 6 months to 16 years) treated with pulsed dye laser for mostly small lesions (average diameter 4 mm) on the face reported successful removal in 20 children in 1 to 6 treatment sessions (average 2.25) with no residual scarring. Two children with larger lesions required shave excision with cauterization (scarring was not assessed).⁷

Sclerotherapy:

No recurrence, inconspicuous scars

A case series reported results in 9 patients (median age 18 years; range 1-57 years) with pyogenic granuloma treated with a single injection of the sclerosing agent monoethanolamine oleate.² All lesions disappeared without recurrence; the authors described remaining

CLINICAL INQUIRIES

scars as inconspicuous. One patient reported residual pain lasting 4 weeks after injection of the sclerosing agent into a 1.5 cm × 1.0 cm pyogenic granuloma that hadn't responded to previous cryotherapy.

Recommendations

A standard dermatology textbook recommends curettage with cautery, and reports that spontaneous regression is common after 6 months.⁸ A

standard pediatric textbook recommends surgical excision with or without cautery, adding that small pyogenic granuloma lesions (<5 mm) may be removed with pulsed dye laser.⁹

An online textbook recommends either excision or shave (with or without curettage), but advises surgical excision with histologic confirmation for pyogenic granuloma lesions that can't be differentiated with certainty from amelanotic melanoma, which typically grows more slowly.¹⁰

JFP

References

- Giblin AV, Clover AJP, Athanassopoulos A, et al. Pyogenic granuloma—the quest for optimum treatment: audit of treatment of 408 cases. *J Plastic Reconstr Aesthet Surg*. 2007;60:1030-1035.
- Matsumoto K, Nakanishi H, Seike T, et al. Treatment of pyogenic granuloma with a sclerosing agent. *Dermatol Surg*. 2001;27:521-523.
- Pagliai KA, Cohen BA. Pyogenic granuloma in children. *Pediatr Dermatol*. 2004;21:10-13.
- Ghodszi SZ, Razi A, Taheri M, et al. Comparison of cryotherapy and curettage for the treatment of pyogenic granuloma: a randomized trial. *Br J Dermatol*. 2006;154:671-675.
- Mirshams M, Daneshpazhooh M, Mirshekari A, et al. Cryotherapy of pyogenic granuloma. *J Eur Acad Dermatol Venereol*. 2006;20:788-790.
- Raulin C, Greve B, Hammes S. The combined continuous-wave/pulsed carbon dioxide laser for treatment of pyogenic granuloma. *Arch Dermatol*. 2002;138:33-37.
- Tay YK, Weston WL, Morelli JG. Treatment of pyogenic granuloma with the flashlamp-pumped pulsed dye laser. *Pediatrics*. 1997;99:368-370.
- Habif TF. Vascular tumors and malformations. In: Habif TF. *Clinical Dermatology: A Color Guide to Diagnosis and Therapy*. 4th ed. St. Louis: Mosby; 2004:814-833.
- Kliegman RM, Nelson WE. Vascular disorders—benign acquired. In: Kliegman RM, Behrman RE, Jenson HB, et al. *Nelson Textbook of Pediatrics*. 18th ed. Philadelphia: Saunders; 2007:2667-2674.
- Goldstein BG, Goldstein AO. Benign neoplasms of skin (section on pyogenic granuloma). UpToDate [online database]. Version 17.2: Waltham, Mass: UpToDate; May 2009.

CME/CE Webcasts and E-newsletters

from the **American Society for Reproductive Medicine** and its journal, *Sexuality, Reproduction & Menopause*



srm
SEXUALITY, REPRODUCTION & MENOPAUSE

UP TO
5.0 CME/CE
CREDITS



E-NEWSLETTER 1

Issues in postmenopausal hormone therapy: Counseling patients about bioidentical hormone preparations

Nanette F. Santoro, MD
Supported by an independent educational grant from Solvay Pharmaceuticals, Inc.

E-NEWSLETTER 2

Issues in postmenopausal hormone therapy: Depression, endometrial health, and discontinuation

James H. Liu, MD
Veronica A. Ravnikar, MD, FACOG
Nanette F. Santoro, MD
Supported by an independent educational grant from Solvay Pharmaceuticals, Inc.



Luteal support in reproduction

PRESENTED BY Sandra A. Carson, MD, Valerie L. Baker, MD, and James H. Liu, MD
Supported by an independent educational grant from Columbia Laboratories.



Update on HPV: Beyond cervical cancer

PRESENTED BY J. Thomas Cox, MD, Hope K. Haefner, MD, and Joel Palefsky, MD
Supported by an independent educational grant from Merck & Co., Inc.



Click on Free CME at
www.srm-ejournal.com