The 5 P's of Pyoderma Gangrenosum

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ABSTRACT

The diagnosis of pyoderma gangrenosum (PG) is often difficult to establish based on a clinical presentation, which can mimic other dermatologic conditions. The formation of a mnemonic that incorporates the most prevalent clinical features of PG could aid in accuracy and speed of diagnosis. The 5 P's of PG: Painful, Progressive, Purple, Pretibial, Pathergy, and systemic associations, incorporate parameters recognizable on the first encounter with a patient with PG without reliance on histopathology and laboratory findings or treatment response. We postulate that this simple mnemonic will have the most utility with non-dermatology clinicians encountering a lesion suspicious for PG. By assisting in differential diagnosis formation, this mnemonic may lead to timelier biopsies and treatment initiation. The limitations of this approach mirror those of other studies and include lower sensitivities in patients with an atypical PG presentation. In conclusion, the 5 P's of PG offer a useful mnemonic for the diagnosis of PG, particularly in the initial clinical diagnosis prior to skin biopsy and treatment.

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INTRODUCTION

Pyoderma gangrenosum (PG) is an inflammatory neutrophilic dermatosis which is often difficult to diagnose because of a clinical presentation which frequently mimics conditions such as infections, vascular diseases, and malignancies.[1] Recently, several studies have attempted to define the prevalence of clinical manifestations of PG in order to improve diagnostic accuracy.[2-4] Utilizing these reports, we offer for consideration a mnemonic of the clinical features of PG, the 5 P's of PG: Painful, Progressive, Purple, Pretibial, Pathergy, and systemic associations (Table 1).

This set of key clinical parameters is recognizable on the first encounter with a patient with PG and is modeled after the widely used 6 P's of lichen planus (planar, purple, polygonal, pruritic, papules, and plaques).[5] Our mnemonic incorporates the most sensitive features from compressive diagnostic algorithms and does so without reliance on histopathology and laboratory findings, co-morbidities, or treatment response.[4,6] Moreover, the addition of "pretibial" reminds us of the most common location of PG: 78% of patients reported by Binus et al[7] and 62% of patients reported by Ashchyan et al[8] had lesions on the legs.

TABLE 1.

The 5 P's in the Clinical Diagnosis of Pyoderma Gangrenosum. Numbers reported as percentage of cases expressing each clinical finding; Data reported for any location on the legs for Binus et al and Maverakis et al (most PG lesions on the legs are pretibial); 55% of cases had multiple ulcers with at least one on anterior lower leg; Maverakis et al criterion definition: Papule, pustule, or vesicle that rapidly ulcerates.

Finding	Literature Source							
	Binus	Maverakis	Jockenhöfer	Ahronowitz	Ashchyan	Brooklyn	Kridin	Xia
Purple (undermined) borders	--	91%	98%	--	--	--	--	--
Painful	64%	91%	88%	--	86.2%	--	--	--
Pretibial[2]/ Peristomal	77.7%/--		--	--	61.8%/18.3%	--/15%	--	--
Progressive	--	42%	98%	--	42%	--	--	--
Pathergy	31.1%	35%	73%		28.1%	--	16.3%	
Gut	34%	--	--	29.6%	41.0%	--	17.6%	44.6%
Arthritis	29.1%	--	--	22%	20.5%	--	12.8%	27.7%
Neoplasm of blood	10.7%	--	--	5.6%	5.9%	--	8.9%	13.3%

Due to the complex nature of PG diagnosis, we postulate that this simple mnemonic will have the most utility with non-dermatology clinicians encountering a lesion suspicious for PG. By assisting in differential diagnosis formation, this mnemonic may lead to timelier biopsies and treatment initiation. At that time, the utilization of the more precise criteria set forth by Jockenhöfer et al will allow for the dermatologist to more definitively establish a diagnosis of PG.[4] The limitations of this concept mirror those of other studies and include lower sensitivities in patients with an atypical PG presentation. In addition, by omitting some histopathologic and treatment response criteria in the proposed mnemonic, the specificity, inadvertently, will be reduced. However, most of the omitted criteria are not available on initial evaluation. Despite these limitations, we believe this is a useful approach with simplicity that facilitates adoption into clinical practice.

CONCLUSION

The 5 P's of PG offers a useful mnemonic for the diagnosis of PG, particularly in the initial clinical diagnosis prior to skin biopsy and treatment.

DISCLOSURES

No author has conflicts of interest relevant to the manuscript. There are no funding sources to disclose.

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