The pathogenesis of nummular dermatitis is unclear. It has been described in association with xerosis, venous stasis, and infection.[2-4] Nummular dermatitis must be distinguished from atopic dermatitis with nummular morphology, which is particularly observed in childhood.[3] Nummular lesions have also been associated with contact sensitization, which may represent primary allergic contact dermatitis or secondary development of allergic contact dermatitis to medicaments for nummular dermatitis lesions.[2] This latter scenario was favored for patients 4 and 6, who had clinically relevant positive patch test results to corticosteroids, neomycin, or both, but only partially improved with allergen avoidance. Some have advocated that nummular dermatitis be viewed as a morphology rather than a unique disease state; regardless of viewpoint, any underlying causes should be addressed whenever possible before nummular lesions are deemed idiopathic.

Our findings suggest that nummular dermatitis may involve hyperactivation of the Th2 axis that is sensitive to dupilumab inhibition. Circulating Th2 lymphocyte burden was previously correlated with disease activity in a case of chronic nummular dermatitis secondary to odontogenic infection in a nonatopic male patient.[5] Further investigation into the pathogenesis of nummular dermatitis is necessary.

In conclusion, we report the successful use of dupilumab at standard dosing in the treatment of 5 of 6 patients with nummular dermatitis and no history of stasis dermatitis or atopic dermatitis, in accordance with the revised Hanifin and Rajka criteria. We are not aware of similar reports. Our findings suggest that dupilumab may be an effective off-label treatment for nummular dermatitis that has failed conventional therapy. Further study is required to corroborate these findings.

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Missed drug-induced bullous pemphigoid leads to longer immunosuppression than recognized cases: A 9-year retrospective review

To the Editor: Drug-induced bullous pemphigoid (BP), a BP variant associated with more than 50 medications and often indistinguishable from classic BP,[1-3] is difficult to recognize without a thorough medication history, particularly in patients with polypharmacy. This multicenter retrospective study reports rates of potential missed drug-induced BP and compares its presentation and management to recognized cases.

Biopsy- and immunofluorescence-proven BP cases from January 2010 through January 2019 were identified using International Classification of Diseases, ninth revision (694.5) and 10th revision (L12.0) codes; GEM and RLY reviewed medication histories. Gestational, mucous membrane, and immune checkpoint inhibitor–induced pemphigoid and cases without medical records for 6 months preceding BP onset were excluded. Cases identified by treating dermatologists as drug induced (based on timing, drug class, and response to drug withdrawal) were classified as such. Cases for which any new medication was added within 6 months preceding BP onset and treating dermatologists neither

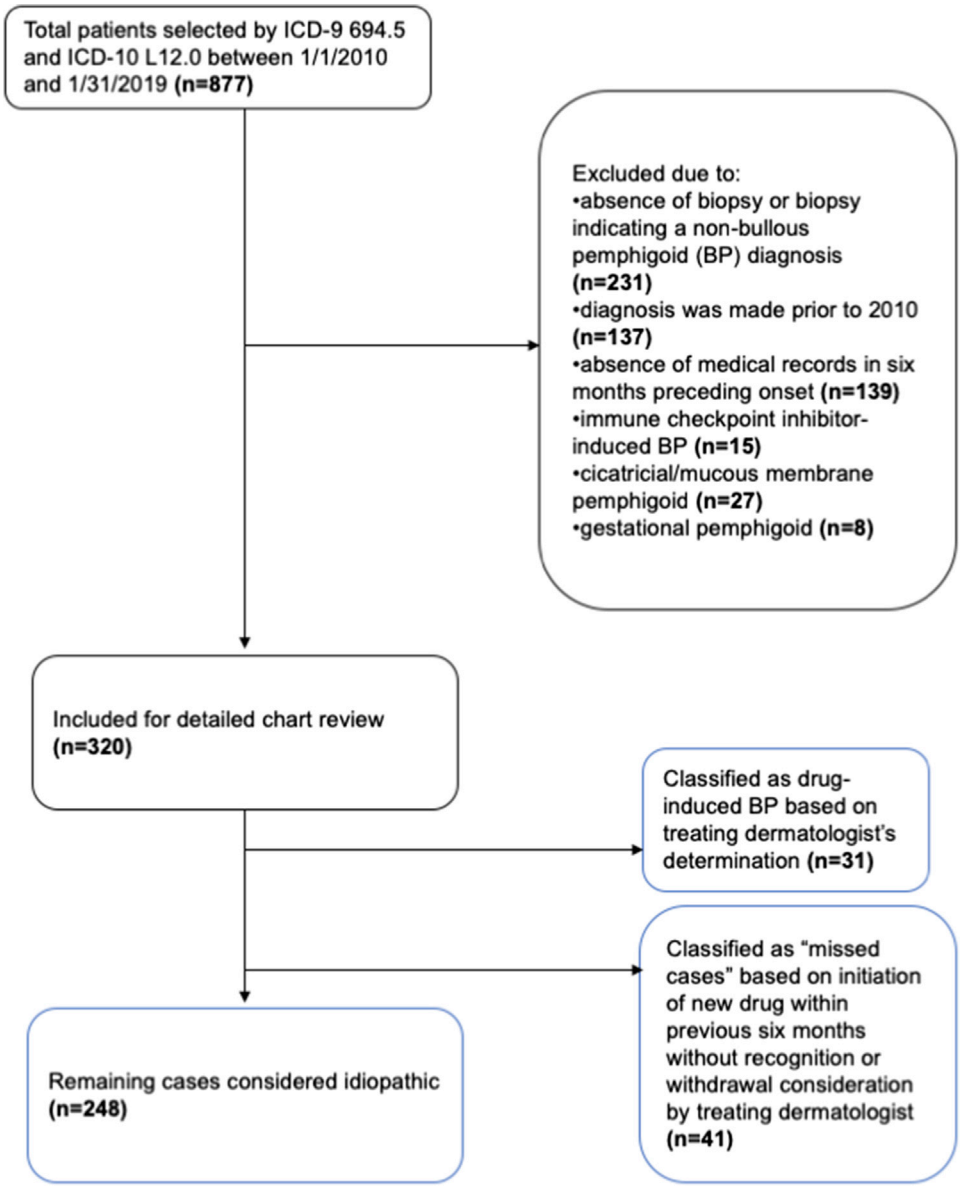

Fig 1. Flow diagram of the study's methodology and case selection, with criteria for inclusion. *ICD-9*, International Classification of Diseases, ninth revision; *ICD-10*, International Classification of Diseases, 10th revision.

documented the change nor considered discontinuation were labeled *missed*. The remaining cases were considered idiopathic (Fig 1). Statistical analyses were performed with Stata 15.0 (StataCorp, College Station, TX), with $P < .05$ considered statistically significant.

Among 320 BP cases, 77.5% (248/320) were idiopathic, 9.7% (31/320) were recognized as potentially drug induced, and 12.8% (41/320) had new medications missed by dermatologists. Baseline characteristics of patients were similar between missed and recognized cases (Table I).

Among the 41 missed cases, common medications included antibiotics (39%) and diuretics (20%). Median time from drug initiation to BP manifestation (pruritus or cutaneous lesions) was 6.9 weeks (interquartile range, 2.9-12.6). Median time from symptom onset to diagnosis was 7.9 weeks (interquartile range, 3-16). In 39% (16/41) of missed cases, patients presented with nonbullous eruptions.

In 87% (34/41) of missed cases, patients received systemic immunosuppression to achieve clinical remission, compared with 61% (19/31) of patients in cases of recognized drug-induced BP ($P = .039$)

Table I. Characteristics and management of missed and recognized drug-induced cases and exclusion

Characteristics	Missed (n = 41)	Drug induced (n = 31)	*P* value*
Age, y, mean (SD)	82.5 (9.3)	81.7 (14)	.77
Female sex, n (%)	20 (49)	13 (42)	.56
Prior drug allergy, n (%)	18 (44)	11 (35)	.47
Associated medications, n (%)†			.27
Antibiotics	16 (39)	12 (39)	
Amoxicillin	1 (2)		
Azithromycin	2 (5)		
Cefepime	1 (2)		
Ceftriaxone	3 (7)		
Cephalexin	4 (10)		
Ciprofloxacin	1 (2)		
Clindamycin	1 (2)		
Levofloxacin	4 (10)		
Diuretics	8 (20)	11 (35)	
Hydrochlorothiazide	1 (2)		
Furosemide	7 (17)		
Antihypertensives	3 (7)	4 (13)	
Labetalol	1 (2)		
Metoprolol	1 (2)		
Valsartan	1 (2)		
Statins	3 (7)	2 (6)	
Simvastatin	1 (2)		
Rosuvastatin	1 (2)		
Pravastatin	1 (2)		
Analgesics	3 (7)	0	
Acetaminophen	1 (2)		
Hydrocodone	1 (2)		
Naproxen	1 (2)		
Proton-pump inhibitors/antacids	4 (10)	0	
Omeprazole	3 (7)		
Ranitidine	1 (2)		
Other	7 (17)‡	5 (16)§	
Time from drug exposure to symptom onset, wk, median (IQR)	6.9 (2.9-12.6)	4.4 (1-13.7)	.19
Presence of bullae, n (%)	25 (61)	21 (68)	.55
Time from symptom onset to diagnosis, wk, median (IQR)	7.9 (3-16.1)	5.9 (3-29.3)	.59
Culprit drug discontinuation, n (%)	11 (27)	31 (100)	**<.001**
Systemic immunosuppression, n (%)	34 (87)	19 (61)	**.039**
Duration of immunosuppression for clinical remission, mo, median (IQR)	12 (6-18)	2 (1-4.5)	**<.001**

Bold indicates statistical significance ($P < .05$).
IQR, Interquartile range; *SD*, standard deviation.
*Statistical analyses include Pearson chi-square (categorical variables) and Wilcoxon's rank sum and *t* tests (continuous variables).
†For 3 missed and 3 drug-induced cases, patients had started 2 new medications simultaneously, and each is listed here.
‡Other medications include bupropion, cholestyramine, fluconazole, insulin degludec, ranolazine, tamsulosin, and warfarin.
§Other medications include azelastine, conivaptan, disopyramide, mepolizumab, and sertraline.

(Table I). The duration of immunosuppression was significantly longer for missed cases than recognized cases (median, 12 vs 2 months, respectively; $P < .001$). Among missed cases, the 11 patients (27%) whose potential culprit drugs were eventually discontinued for adverse effects or treatment completion required significantly shorter periods of immunosuppression than the 30 patients (73%) who continued to receive unrecognized potential culprit drugs (median, 7 vs. 12 months, respectively; $P = .02$), most of whom (67%) continued receiving treatment at their latest documented visit.

Failure to recognize potential drug-related BP occurred in 13% (41/320) of our cases and carries

significant therapeutic implications, including prolonged, multidrug immunosuppression.[4] Common and potentially useful features of missed cases include timing of onset, known BP-associated medications, and minimal response to treatment.

Because 78% (32/41) of missed cases occurred within 3 months of drug initiation and 85% (35/41) were associated with 6 drug classes (antibiotics, diuretics, antihypertensives, statins, antacids, and analgesics), this specific time frame and medication history should be elicited. Nonbullous presentations and 2-month diagnostic delays may have contributed to the observed rate of missed cases.

Limitations include our retrospective design and small sample size. Although some missed cases may have been idiopathic with coincidental recent new medications, the substantial proportion of BP cases with overlooked potential triggers suggests that additional research is needed to better define features associated with drug-induced BP to assist dermatologists in minimizing unnecessary immunosuppression in affected patients.

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The frequency of topical antibiotic use after biopsy and excision procedures among dermatologists and nondermatologists: 2006 through 2015

To the Editor: Several studies have documented that topical antibiotics do not reduce the risk of surgical site infection after uncomplicated clean cutaneous surgery compared with petrolatum.[1,2] Although evidence-based recommendations from the Centers for Disease Control and Prevention recommend avoiding topical antibiotic use, nearly half of dermatology wound care handouts advise using topical antibiotics after such procedures.[3,4] However, there is a lack of information regarding actual clinician prescribing practices for topical antibiotics after these procedures and how this has changed over time.

Using the National Ambulatory Medical Care Survey (NAMCS), we investigated the frequency of topical antibiotic use associated with biopsies and excisions between 2006 and 2015. Each encounter that was coded as including a biopsy or excision was evaluated for prescribing of topical antibiotics (ie, mupirocin, gentamicin, neomycin, bacitracin, polymyxin, clindamycin, and erythromycin). Using logistic regression, we evaluated the frequency of topical antibiotic use after clean biopsies and excisions, stratified by specialty (dermatologists versus nondermatologists). To improve accuracy and better characterize temporal trends in antibiotic use, because of the limited number of observations available in NAMCS, the study period was divided into 5 2-year periods, as has been recommended elsewhere.[4]

In 2014/2015, among patients seen by dermatologists, there were an estimated 503,227 (10.2% of visits) and 268,264 (5.7% of visits) topical antibiotic prescriptions each year associated with biopsies and excisions, respectively. Among patients seen by nondermatologists in 2014/2015, there were an estimated 210,536 (1.9% of visits) and 401,684 (5.3% of visits) topical antibiotic prescriptions each year associated with biopsies and excisions, respectively.

During the study period, the odds of receiving a topical antibiotic after a biopsy initially fell among