



## Chronic Papillomatous Dermatitis in a Patient with a Urinary Ileal Diversion: A Case Report and Review of the Literature

Pooja H Rambhia<sup>1,2\*</sup>, Ruzica Z Conic<sup>1,2</sup>, Kord Honda<sup>1,2</sup> and Danyelle Dawes<sup>1,2</sup>

<sup>1</sup>Case Western Reserve University School of Medicine, Cleveland, USA

<sup>2</sup>Department of Dermatology, University Hospitals Cleveland Medical Center, Cleveland, USA

### Keywords

Chronic papillomatous dermatitis, Stoma dermatitis, Peristomal skin

### Abbreviations

Chronic Papillomatous Dermatitis (CPD), Human Papilloma Virus (HPV)

### Introduction

Gastrointestinal surgical procedures result in approximately 100,000 ostomies per year in the United States, with over 10,00,000 people living with intestinal stomas [1]. Proper use and management of a stoma appliance relies heavily on peristomal skin integrity; however abdominal stoma patients can develop various dermatologic complications including allergic contact dermatitis, mechanical dermatitis from appliance stripping, infections, pyoderma gangrenosum and irritant contact dermatitis. Peristomal irritant contact dermatitis is partially attributed to leakage around the stoma due to ill-fitting ostomy equipment. Chronic exposure of peristomal skin to urine and fecal matter can manifest as an acanthomatous inflammatory reaction, known as Chronic Papillomatous Dermatitis (CPD). CPD has been classically associated with urostomies, while few ileostomy-associated CPD reports exist [1]. Specifically, it has been attributed to the alkaline pH of urine mechanical irritation and epidermodysplasia verruciformis Human Papilloma Virus (HPV) types [2]. 9.5% of stoma patients reportedly develop CPD after the stoma has been present for an average of 6.5 years [3].

Histopathological descriptions of CPD have ranged broadly in various urologic and wound care literatures including hyperkeratotic stenosis, stomal keratinization, pseudoverrucous, pseudoepitheliomatous, acanthomatous epidermal hyperplasia and reactive acanthosis. The majority of CPD lesions have been previously described to fall under the realm of reactive changes resulting from

a chronic irritant contact dermatitis. Furthermore, the lack of CPD reports in dermatologic literature, and the rarity of specifically ileostomal associated CPD cases indicate a need for further clinical and histologic description (Table 1). To this end, we report a case of ileostomy-associated CPD and a review of the literature for clinical and therapeutic interest (Figure 1).

### Case Presentation

A 74-year-old Caucasian male was referred to dermatology for an exophytic, peristomal skin lesion suspected to be peristomal dermatitis. Patient history was significant for prostate cancer treated with Cyber Knife radio surgery and subsequent cystoprostatectomy with ileal conduit urinary diversion and nephrectomy. One year later, the patient presented with a 3 cm tender, flesh-colored, exophytic papillomatous nodule around the ostomy site. The mass progressively enlarged until the primary stoma site was completely occluded, necessitating catheter insertion proximal to the ostomy site for urine release. Shave biopsy of the nodule was performed to exclude neoplastic growth.

**\*Corresponding author:** Pooja H Rambhia, Department of Dermatology, University Hospitals Cleveland Medical Center, 2085 Cornell Road, Cleveland, OH 44106, USA, Tel: 516-870-8632, E-mail: [phr17@case.edu](mailto:phr17@case.edu)

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**Table 1:** Clinical and histopathologic characteristics of chronic papillomatous dermatitis reports: Review of the literature.

Paper	CPD cases reported	Sex	Age	Stoma type	Duration of stoma	Histologic description	HPV detected	Therapeutic approach employed	Resolution of lesions
Our case	1	M	74	Ileostomy	1 year	Papillomatosis and massive parakeratosis with significant regular epidermal hyperplasia	NR	Excision and vinegar soaks	Yes
Kitamura, et al. [9]	1	M	83	Ileostomy	11 months	Papillary hyperkeratosis with nuclear atypia	ND	Surgical excision w/ flap reconstruction	Yes
Raghu, et al. [3]	1					Nevus sebaceous-like hyperplasia	HPV 16 (PCR)	Stoma revision	Yes
Fernandez, et al. [10]	1	M	66	Urostomy	1 year	Psoriasiform epidermal hyperplasia with broad hyperparakeratosis	NR	Stomal apparatus modification	Yes
Mattoch, et al. [11]	1	M	55	Urostomy	13 years	Ecrrine syringofibroadenoma	NR	Wide surgical excision with creation of a new ileostomy	Recurrence
Kazakov, et al. [12]	1	F	62	Colostomy	2 years	Syringofibroadenomatous	HPV 36 (PCR)	Stoma revision	NR
Williams, et al. [7]	1	M	63	Ileostomy	0.5 year	Acanthomatous, papilomatosis	ND	Triamcinolone acetonide topical was unsuccessful; ileostomy excision and revision	Yes
Clarke [13]	2	M, F	76, 49	Colostomy, Ileostomy	5 years, 20 years	Syringofibroadenomatous	ND	Stoma revision	Yes
Lyon, et al. [2]	4 CPD	4 males, 1 female	51 mean	3 Urostomy	NR	Pseudoepitheliomatous hyperplasia	NR	3 patients resolved using convex-backed appliance to correct for a short stoma; 1 patient required surgical stoma revision	Yes
Wieland, et al. [5]	1	F	55	Ileostomy	13 years	Papillomatosis, acanthomatous	HPV 20, 23, and 38 (PCR)	Podophyllin, laser ablation	Recurrence
Goldberg, et al. [14]	2	M	15, 2.7	Urostomy, colostomy	15 years, 2.7 years	Pseudoverrucous, acanthomatous	ND	Stoma revision; increased diaper changes	Recurrence
Nordstrom [15]	14	NR	62 mean	Urostomy	7 years mean	Pseudoverrucous	ND	Improved stomal care	Yes
Bergman, et al. [16]	10	NR	57 mean	Urostomy	31 years mean	Acanthomatous	ND	Stomal apparatus modification	Yes
Cordonnier and Nicolai [17]	1	NR	NR	Urostomy	NR	Verrucous	ND	Stomal apparatus modification	Yes
Burnham and Farrer [18]	1	NR	NR	Ileal conduit	NR	Verrucous	ND	NR	NR
Rattner [19]	1	NR	NR	Ileal conduit	2.3 years	Verrucous	ND	Surgical revision	NR
Cordonnier [20]	2	NR	NR	Ileal conduit	NR	Verrucous	ND	NR	NR

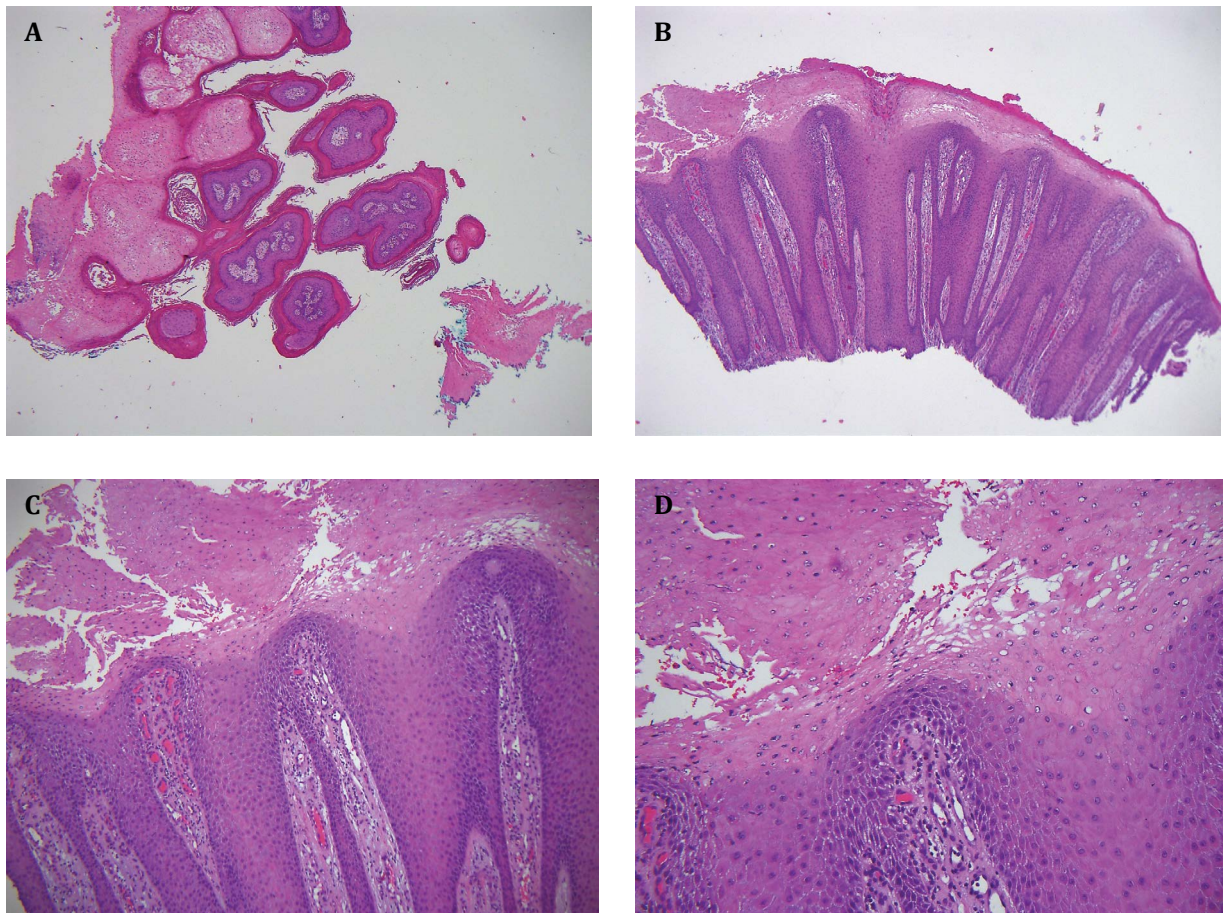
NR: Not Reported; ND: Not Detected.

Microscopic examination revealed papillomatosis and massive parakeratosis with significant regular epidermal hyperplasia and vertical papillary dermal fibrosis with pallor of upper layer keratinocytes. There was a mild superficial lymphocytic, neutrophilic and eosinophilic perivascular infiltrate with foci of occasional neutrophil exocytosis. These histopathologic findings were consistent with CPD. The nodule was excised and the patient

was advised to perform vinegar soaks of the affected area. No complications were noted following the advised vinegar soaks.

## Discussion

We report a case of CPD, a distinct cutaneous eruption comprised of exuberant, wart-like papules due to stomal site chronic irritant contact dermatitis. Similar



**Figure 1:** A) Scanning magnification-exhibiting papillomatosis (4x); B) Scanning magnification exhibiting psoriasiform morphology (4x); C) Parakeratosis with significant epidermal hyperplasia (10x) and D) Neutrophil exocytosis with rare eosinophil (20x).

lesions are described as hypertrophic scarring, hyperkeratotic stenosis, stomal keratinization, pseudoepitheliomatous hyperplasia, and reactive acanthosis in urologic and wound care literature [1,4]. Stomal irritant reactions have similar histopathologic features, though clinical appearance is contingent on stoma type and source of irritation. The higher incidence of CPD with urostomies reported in the literature may be due to larger cutaneous surface area exposed to urine irritation. Ileostomies contain high concentrations of degradative enzymes and bile acids, which can lead to severe dermatitis and erosions [1].

HPV's role in the etiology of CPD has been contended. HPV can lead to a number of benign and malignant epithelial tumors, due to viral integration and expression of oncoproteins E6 and E7 [5,6]. The resulting genomic instability has been theorized to be involved in the development of rare-stoma related cutaneous pathologies [3]. Ileostomal-associated papillomatous lesions have been reported positive for epidermodysplasia verruciformis HPV strains, as well as HPV-16 [5]. Still, the role of HPV in CPD remains unclear as not all lesions are positive for HPV and cutaneous symptoms resolve following removal of irritant source [5]. Furthermore, amongst re-

ported cases of HPV-positive CPD, clinical presentation, histopathology, and treatment do not differ from HPV negative CPD cases [2,3,5]. As such, HPV testing was not performed, as it would not have altered patient care. Nevertheless, the potential spread of cutaneous HPV to mucosal surfaces of the intestine highlight the need for timely diagnosis of peristomal lesions.

Primary management involves refitting the stomal apparatus and reducing bag change intervals. If urine leakage occurs due to a receding stoma, convex-backed appliances can lengthen urostomies and stop leakage. Construction of a protruding stoma, i.e. classic Brooke ileostomy, can be used to prevent effluence of stomal contents [7]. Non-invasive treatment includes topical silicone, hydrocortisone and 5-fluorouracil creams [8]. Vinegar soaks at each bag change may be effective in resolution of lesions [2]. If CPD lesions result in stomal stenosis, extirpation and revision may be indicated. Maintaining stomal hygiene is necessary to minimize irritant dermatitis from fecal and urinary soiling.

Recognition and awareness of peristomal lesions among dermatologists, urologists and wound care specialists is necessary to improve patient quality of life.

## Conflict of Interest Disclosure

None to declare.

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