Each menstruating patient was matched with the next four non-menstruating sexual assault victims presenting to the same clinic using two variables (age, ethnicity). Demographic information, sexual assault history, and clinical findings were retrospectively obtained from NEP records and recorded onto study abstraction forms to guide data collection. Using appropriate safeguards to protect patient confidentiality, medical records were reviewed by one research nurse who was trained using a set of "practice" cases. A second investigator performed a blinded critical review of a random sample of 10% of the charts to determine reliability. The interrater agreement for this sample of charts was significant (k-statistic = 0.93).

A total of 177 cases of sexual assault in menstruating women were identified, representing 9.5% (177/1873) of the women presenting to the NEP. The age range among sexual assault victims was 13 to 47 years (mean, 20.5 ± 12 years). There were no significant differences in marital status, time interval to exam, perpetrator factors, or assault characteristics between the two patient groups (Table 1). A total of 1859 anogenital injuries were documented in the study population. Menstruating women had fewer anogenital injuries compared to non-menstruating victims (58.2% vs. 70.2%, P = 0.003). Menstruating women had a smaller incidence of documented anogenital lacerations (25% vs. 36%, P = 0.007), and fewer abrasions/ecchymosis (18% vs 30%, P = 0.001). The overall injury pattern was not statistically different; common sites of injury in both groups were posterior, including the fossa navicularis, hymen, fourchette, and labia minora.

This is the first clinical study to evaluate the presence of menstrual bleeding and its effect on the frequency of sexual assault examination findings. We found that menstruating women had 12% (95% CI 4% to 20%) fewer documented anogenital injuries when compared to non-menstruating victims. One explanation for these findings is that sexual assault in non-menstruating women was associated with more violent behavior. However, the victim demographics were similar regarding weapon use, victim incapacitation, non-genital injuries, multiple assailants, or known assailant (Table 1). An alternative but less likely explanation is that hormone levels could have confounding effects through influences on vaginal epithelial and mucosal integrity. However, a recent study in women following consensual sexual intercourse found that among menstruating women, those in the follicular phase were approximately three times more likely to have any external genital injury than those in the luteal or ovulatory phases [7].

Table 1
Patient demographics and assault characteristics (%)

	Menstruating	Non-menstruating
Total	177	708
Age of victim, mean (SD)	20.5 ± 11 yrs	20.4 ± 12 yrs
Ethnicity (% white)	136 (76.8)	545 (77.0)
Marital status (% single)	134 (75.7)	525 (74.2)
Last consensual intercourse <72 h	39 (22.0)	179 (25.3)
Time interval to exam, mean (SD)	17 ± 8 h	18 ± 9 h
Alcohol or drug use <24 h	79 (44.6)	304 (42.9)
Police report filed	143 (80.8)	595 (84.0)
Known assailant	115 (63.8)	468 (66.1)
Multiple assailants	18 (10.2)	71 (10.0)
Type of sexual assault		
Vaginal	157 (88.7)	651 (91.9)
Oral	37 (20.9)	170 (24.0)
Anal	25 (14.1)	80 (11.3)
Digital	57 (32.2)	209 (29.5)
Type of coercion		
Verbal threats	79 (44.6)	309 (43.6)
Physical	58 (32.8)	215 (30.4)
Restraint used	55 (31.1)	233 (32.9)
Victim sleeping/drugged	43 (24.3)	187 (26.4)
Use of weapons	28 (15.8)	92 (13.0)
Nongenital injuries	85 (48.0)	328 (46.3)
Anogenital injuries*	301 (58.2)	1558 (70.2)
Anogenital injuries, mean (SD)*	1.7 ± 1.9	2.2 ± 2.0

* Indicates significance at the P < 0.05 level.

The retrospective study design prevented the control for the clinical evaluations by different examiners. It could be that documentation was not uniform, although the nine nurse examiners had a similar level of training and experience. Variability in examination technique and the data that were collected as part of a clinical rather than research protocol both introduce error. The findings of the examiners were recorded on state mandated reporting forms and were taken as the most accurate representation of the actual physical findings. Finally, colposcopic photographs, although generally are reliable at showing acute trauma such as abrasions and lacerations, may not show the subtler findings of erythema, ecchymosis, or swelling of tissues. Despite these limitations, it seems reasonable to conclude that the presence of menstrual blood may mask anogenital injuries such as abrasions, ecchymosis and superficial lacerations. Further prospective research is needed to confirm these findings from a single center.

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Evaluation of abdominal aortic aneurysm in patients with nonvariceal upper gastrointestinal hemorrhage

Although potentially life-threatening, and potentially treatable, primary aortoduodenal fistula(PADF), a disorder most commonly secondary to abdominal aortic aneurysm(AAA), is notable for the absence of its mention in guidelines for management of nonvariceal upper gastrointestinal hemorrhage(NVUGH) [1-4].

Even when "second look" endoscopy is mentioned for recurrent bleeding [5], or surgical intervention is contemplated [6], no mention is made that the precaution should be taken to rule out PADF.

The relationship between AAA and NVUGH is a complex one. Firstly, there is an association between AAA and peptic ulceration [7]. In the

latter survey of 7044 necropsies of a general teaching hospital for the years 1954–1966 inclusively, 523 cases of peptic ulceration, and 99 cases of AAA were identified. The incidence of peptic ulceration was 22.6% among cases with AAA, as opposed to 7.2% in the general necropsy population. Prevalence of AAA, itself, was age-related, 95 of the 99 cases of AAA being in the 50-plus age group [7]. In another study, among 106 living subjects with intact AAA who underwent gastroduodenoscopy(97 purely for screening, and 9 for gastrointestinal bleeding or abdominal pain), peptic ulceration(including gastric ulceration and duodenal ulceration) was identified in 26.4% of patients with AAA. Fifty percent of the gastric ulcers bled before aneurysmectomy, and 16.7% of the duodenal ulcers bled postoperatively [8]. Accordingly, even in the presence of AAA, NVUGH can be attributable solely to peptic ulceration [8].

AAA is also a risk factor for PADF and, hence, NVUGH. Bleeding attributable to PADF is, therefore, an important differential diagnosis of NVUGH. Even in the presence of AAA, however, the differential diagnosis of NVUGH should include both PADF and bleeding peptic ulcer, given the fact that peptic ulceration(including bleeding peptic ulcer) can coexist with AAA [7,8]. PADF, however, is considerably less prevalent than bleeding peptic ulcer, only 253 cases having been reported in the world literature before 1993 [9]. A further 81 new cases were reported from January 1994 to December 2003 [10]. Those statistics do not diminish the importance of maintaining an index of suspicion for PADF, given the fact that a tally of anecdotal reports might underestimate the true prevalence of this disorder.

Atherosclerotic aneurysms are the underlying cause of 73% of cases of PADF [11]. Traumatic and mycotic aneurysms account for the rest of the cases of PADF [11]. The classic presenting triad is NVUGH(64%), abdominal pain(32%), and pulsatile abdominal mass(25%) [12]. The full triad, however, is present in only 11% of cases [10]. Accordingly, PADF "should be suspected in all patients with upper gastrointestinal bleeding" [13]. This recommendation is echoed by the authors of other reports of successful management of PADF [14,15], a disorder with 100% mortality risk if left untreated [13].

The irony is that the initial PADF-related bleed(so-called "herald" bleed) is usually self limited, "most probably due to spasm of the intestinal wall musculature as a response to sudden distension", and also due to thrombus formation, and fall in blood pressure [16]. The secondary bleeding episode, which is typically massive, may recur hours or weeks later [16]. Typically, however, in spite of overt NVUGH, no source of bleeding can be identified on endoscopy [10,14,15,17,18]. Alternatively, a non-bleeding peptic ulcer may only be an incidental finding [16,19]. In both scenarios there should be a heightened index of suspicion for PADF, especially if there has been previous documentation of AAA [16,20,21]. Nevertheless, the potential for bleeding peptic ulcer to coexist with ruptured AAA should also be borne in mind, given the "cautionary tale" of a patient with ruptured AAA who died undiagnosed after an emergency operation for a bleeding gastric ulcer [22].

1. Comment

Notwithstanding the compelling evidence of the association of AAA and PADF [9,10], and the recommendation that PADF should be included in the differential diagnosis of NVUGH [13-15], none of the guidelines [1-5] have taken up the latter recommendation. At the very least, during evaluation of a patient with NVUGH, there should be an index of suspicion for coexisting AAA, generating an inquiry about abdominal pain, and abdominal examination for a pulsatile abdominal mass. The index of suspicion should be higher if there are risk factors for AAA, and that index of suspicion should prevail even if the triad of NVUGH, abdominal pain, and pulsatile abdominal mass is incomplete. The risk factors for AAA include age > 50 [7], tobacco use [23], history of treatment for hypertension [24], and clinical evidence of peripheral artery disease [24]. The diagnostic utility of documentation of peripheral artery disease was exemplified by a 79 year old man who presented with hematemesis in the presence of the association of previous diagnosis of unoperated AAA and peripheral artery disease(PAD) [25]. On that basis he was "fast-tracked" to contrast-enhanced computed tomography(CT) of the abdominal aorta without the need for prior gastroduodenoscopy. That strategy facilitated the CT identification of PADF [25]. Accordingly, a case might be made for a strategy of routine screening for AAA, using ultrasonography, in all patients aged 50 or more presenting with NVUGH, especially if they have stigmata of PAD. In the event of non diagnostic gastroduodenoscopy, those with ultrasonographically detected AAA would then proceed to contrast enhanced CT evaluation of the previously documented AAA, within the window of opportunity which exists between the herald bleed and the onset of the potentially fatal secondary bleed.

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Do confidentiality concerns impact pre-exposure prophylaxis willingness in emergency department adolescents and young adults?

Daily oral pre-exposure prophylaxis (PrEP) is recommended to reduce the risk of human immunodeficiency virus (HIV) infection in adolescents and young adults (AYAs) [1]. National electronic pharmacy data suggest that emergency department (ED) providers provide approximately 12–21% of PrEP prescriptions to AYAs [2]. The ED may be a key access for PrEP given the risk profile of the population served [3,4]. Yet, there have been limited studies to examine what factors impact willingness to take PrEP in ED settings.

Lack of confidentiality protections may decrease AYA's willingness to seek sexual health services [5-7]. Confidentiality breaches may exist for AYAs on their parents' health insurance plans. While the Health Insurance Portability and Accountability Act (HIPAA) prevents release of information without written authorization, the insurer can provide the policy holder with information related to billing and payment in an Explanation of Benefits [EOB] which occurs more often in EDs where AYAs are more likely to seek care [3,6].

We sought to explore the relationship between confidentiality concerns and willingness to take PrEP in AYAs seeking care in EDs. We hypothesized that AYA confidential needs may contribute to decreased willingness to take PrEP.

Data were drawn from a web-based cross-sectional survey conducted in a mid-size urban emergency department. Patients 18 to 44 years old completed a 10-minute anonymous survey after registration and triage. This data focuses on 18 to 25-year-old HIV seronegative participants. The Johns Hopkins Medicine Institutional Review Board approved this study.

The survey questions included: demographic, sexual/drug use history; insurance status/source; confidentiality; HIV risk perception; and willingness to take PrEP. Confidentiality questions were developed from validated questions on contraceptive services [8]. Participants were asked whether they wanted their parents to know they were taking PrEP and likelihood of using PrEP if further discussions with parents were required. Responses were converted to a binary (likely/unlikely) due to aggregation.

Simple logistic regression was used to examine associations between parental insurance coverage, confidentiality factors, and willingness to take PrEP. Multivariable logistic regression was performed to examine associations between parental insurance coverage, confidentiality factors, factors associated with PrEP use as determined by existing literature and willingness to take PrEP. Analyses were conducted using StataSE 14 software.

Participants included 156 between the ages of 18 and 25 years. Sociodemographic characteristics are summarized in Table 1. Most participants were female, self-identified as African-American, heterosexual and reported having health insurance coverage. Nearly half were on parental insurance.

In bivariate analysis, age and STI diagnosis were significantly associated with parental insurance coverage. Older AYAs and AYAs with a prior STI diagnosis had a lower odds of being on a parent's insurance compared to younger AYAs. Not wanting a parent to know about PrEP use and being unlikely to use PrEP if required to discuss side effects with parents were negatively associated with willingness to take PrEP, whereas prior HIV testing was positively associated with willingness (Table 2). Parental insurance coverage approached significance in bivariate analysis with AYAs on parent's insurance having a lower odds of being willing to take PrEP.

In the final multivariate model, AYAs who indicated they would not want their parents to know they were taking PrEP had a lower odds of being willing to take PrEP [Table 2, OR = 0.30 (95% CI: 0.11–0.85)] (Table 2).

This is the first ED study to examine parental insurance, confidentiality, and willingness to take PrEP. Parental insurance coverage was not a direct barrier to starting PrEP; however, parent-AYA confidentiality concerns were associated with lower willingness. HIV testing history was associated with greater willingness suggesting that ED PrEP programs will need to be paired with HIV testing services.

ED providers will need to guide AYAs around confidentiality protections that come with parental insurance coverage. This may require insurance companies to further elucidate their policies regarding protections around confidentiality and to establish protocols that prevent disclosure of sensitive information. HIPAA regulations allow for AYAs to request insurers send EOBs by alternative means, but prior studies suggest that insurance companies receive very few yearly requests likely because AYAs are unaware of this right [6,8]. A dialogue between AYAs, clinicians, and insurance companies may be needed to assure confidentiality [9].

This study has potential limitations. Given the high prevalence of risky sexual behavior in ED-seeking AYAs [3], our findings may not generalize to AYAs seeking care in primary care settings. Participants may also have been unaware that they were on their parents' insurance.

This work suggests that AYAs in EDs are less likely to be willing to take PrEP if parents know about their use. In order to increase PrEP access for AYAs in EDs, further research is needed to understand how parental insurance and confidential protections impact access to PrEP. Such research is critical as PrEP for AYAs expands in settings, including EDs where AYAs are frequently seeking care.

Table 1
Demographics, N = 156.

Characteristic	Mean (SD)	N (%)
Age, in years	22.1 (2.2)	
Insurance status		
Insured		143 (91.7%)
Under 26 on parent's insurance		71 (45.5%)
Race (N = 116)		
White		20 (17.2%)
Undefined		14 (12.1%)
Black/African-American		82 (70.7%)
Gender identity		
Female		92 (59.0%)
Male		63 (40.4%)
Other		1 (0.64%)
Sexual orientation		
Heterosexual		135 (86.5%)
LGBTQ[a]		21 (13.5%)
Sexual behaviors		
Men who have sex with men		4 (2.6%)
Unprotected receptive anal sex		20 (12.8%)
Unprotected receptive vaginal sex		59 (37.8%)
STD/HIV history		
History of STI		38 (24.4%)
Have been tested for HIV		126 (80.8%)
Perception of HIV likelihood		3 (1.9%)
Drug use last 6 months		
Marijuana		84 (53.9%)
Other[b]		7 (4.5%)

[a] Lesbian, Gay, Bisexual, Transgender, or Questioning.
[b] Methamphetamines, cocaine, or intravenous drug use.