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PERSPECTIVES

Patient-Generated Images in Perianal Disease: An Evolving Tool in Proctology

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Abstract: This article explores the potential benefits and challenges of incorporating Patient-Generated Images (PGIs) into the clinical practice for perianal conditions. PGIs refer to photographs (and video) captured by patients themselves of affected areas of their own bodies to illustrate potential pathologies. It facilitates remote patient assessments and swift evaluation for coloproctologist. They potentially reduce the need for in person follow-up particularly after operation if the patient is asymptomatic. However, concerns with PGI include quality of images, risk of misinterpretation, ethical, legal, and practical problems, especially when imaging private or sensitive body regions. Any platform transmitting and storing PGIs should prioritize data protection with advanced encryption. Comprehensive guidelines should be developed by collaboration between healthcare administrators, regulators, and professionals, and a thorough framework formulated to ensure that quality care is delivered always while respecting patient privacy and dignity. It should be considered as complementary to, rather than a replacement for, traditional clinical consultations. However, patient awareness and education regarding the limitations are key to ensuring that this modality is not misinterpreted or misused.

Keywords: fistula, haemorrhoids, fissure in ano, telemedicine, patient generated images

The concept of "Patient-Generated Images" (PGIs) which refers to photographs (and video) captured by patients themselves or by trusted family members of affected areas (and physical function) of their own bodies to illustrate potential pathologies, has emerged as a modern tool in clinical medicine. While the term "selfie" is popularly used for casual self-portraits using a cellphone camera, a more formal term –"PGI" – seems more appropriate for clinical purposes.

PGIs offer a convenient option for patients who reside in remote locations or are unable to visit healthcare professionals, a scenario vividly demonstrated during COVID-19 lockdowns. This article examines the potential benefits and challenges of incorporating PGIs into clinical practice, specifically for perianal afflictions, and emphasizes the need for a patient-focused and legally-compliant approach within existing healthcare systems.Patients-generated images or self-reporting are useful not only for communication from remote areas; they are useful in coloproctology to make evident hidden pathologies (ie, prolapsing piles, prolapsing polyp, complete rectal prolapse), sometimes difficult to observe in ambulatory settings.[1]

The rise of telemedicine, encompassing online consultations and sharing of digital 1images, was amplified during the COVID-19 pandemic. It facilitates doctor-patient interactions without in-person visits and has been realized through video-conferencing though, for obvious reasons, this has been largely limited to the verbal aspects of medical consultation. Since the end of the pandemic and social distancing, and the need for telemedicine has declined. Currently, only a few disciplines such as dermatology,[2] ophthalmology,[3] wound-care, and some surgical specialties continue to effectively leverage the ubiquity of the cameras in internet-enabled cellphones for capturing and sharing PGIs for both preliminary and follow-up care.

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Figure 1 Patient-generated photograph of Fistula in Ano.

Telehealth interventions during the COVID-19 pandemic have shown significant potential in improving healthcare delivery and efficiency beyond the pandemic.[4] A scoping review highlights various telehealth applications, categorizing them into AI-based and non-AI-based interventions, and discussing their challenges, policy, privacy, and security issues.[4] The review emphasizes the importance of patient-generated images for remote assessments and follow-ups, advocating for continued innovation to address ongoing healthcare challenges and enhance patient care. Similarly, a systematic review explores the role of telehealth services in preventing, diagnosing, treating, and controlling diseases during the COVID-19 outbreak.[5] It underscores the integration of telehealth into routine healthcare practices to reduce the burden on healthcare systems, enhance patient engagement, and maintain continuity of care, highlighting the relevance of patient-generated images in these efforts.[5] Telehealth can address key challenges in healthcare delivery during the pandemic by reducing physical contact, minimizing transmission risk, and ensuring continuous care. The findings strongly recommend clinicians and patients adopt telehealth tools to prevent and manage COVID-19 effectively.[5]

While PGIs were widely studied during the COVID-19 pandemic, they have not been extensively explored within the field of proctology. This addition highlights the novelty and relevance of our study in this specific medical domain.

Benign perianal diseases, which include hemorrhoids, anal fissures, perianal abscesses and fistulas (Figure 1), affect a significant portion of the population. Hemorrhoids, in particular, are estimated to affect 50% of individuals by age 50. As visual, self-captured, shareable records of these conditions, the diagnostic value of PGIs helps bridge the chasm of healthcare access in developing countries.

Benefits of PGI

PGIs enable remote patient assessments, essential during restrictive periods like the COVID-19 outbreak or for those in remote or inaccessible locations. This approach reduces potential discomfort from direct examinations, especially for milder symptoms, and shifts the focus from doctor-centric to patient-centric. For healthcare professionals, PGIs facilitate expedient assessment, sparing the patient the effort and expense of travel, as well as the bother, awkwardness and potential embarrassment of undressing and exposure. They even allow image magnification for a detailed view, and a measure of scale by the inclusion of a common object in the visual field (such as a coin). PGIs can also reduce the need for follow-up particularly after operation if the patient is asymptomatic (Figure 2). Complete rectal prolapse (Figure 3) can also be easily diagnosed by self-captured or PGI.

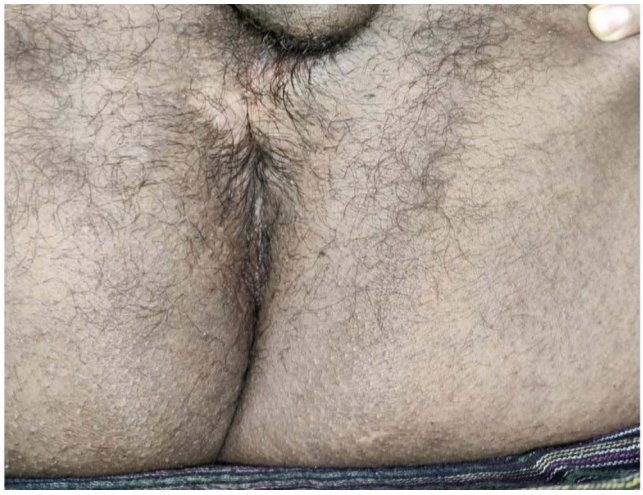

Figure 2 Patient-generated photograph of healing three months after operation.

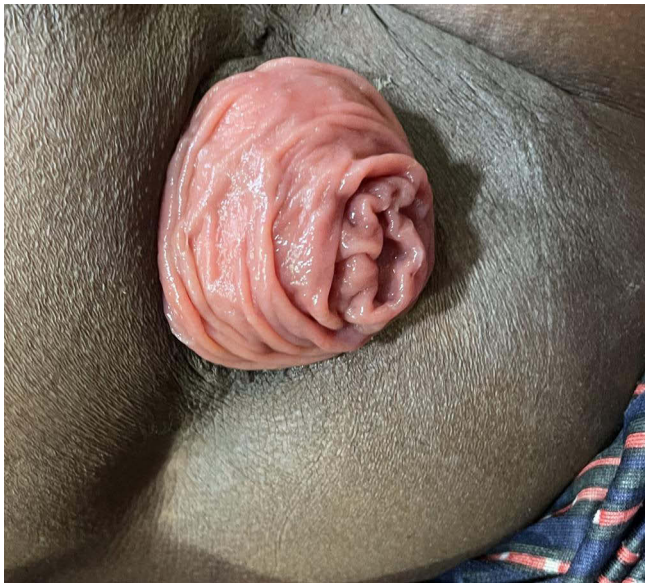

Figure 3 Image of complete rectal prolapse taken by trusted family member.

Concerns with PGI

One primary concern with PGIs is image quality. Patients should be guided in capturing high-quality images as factors like inadequate lighting or improper angles may compromise accurate diagnosis. This may require assistance from a trusted family member, and may need to be repeated if the image is not optimal. Laterality (right and left) will also need to clearly demarcated as front-facing selfie cameras produce mirror images by default while normal cameras do not; a laterally flipped image may cause medical error.

Over-reliance on PGIs might miss urgent conditions and, without comprehensive clinical context, run the risk of potential misinterpretation. Moreover, ethical, legal, and practical problems arise with PGIs, especially when imaging private or sensitive body regions. These range from concerns about patient privacy and image security to potential misdiagnosis and legal implications.

One main limitation of Patient-Generated Images (PGIs) is the inability to assess physical characteristics such as firmness, induration, tenderness, and fluctuation, which are crucial for accurate diagnosis. While PGIs can effectively

capture visual aspects of perianal conditions, they fall short in providing tactile information that is often essential in clinical evaluations.

In countries like India with pressing healthcare demands, innovative approaches like PGIs must be deployed judiciously to prevent unforeseen consequences or negative fallout. Guidelines for telemedicine consultations have been outlined by the Ministry of Health and Family Welfare, and are accessible as a PDF download.[6]

Safety of Patients

PGIs also raise the contentious question of how the patients share them with the doctor and how comfortable they are with doing so. A patient might not mind showing the photograph of a private bodily part on his or her own cellphone screen to a doctor or nurse, but may be reluctant to transmit it over social media or e-mail even if absolute confidentiality and privacy are assured. Would patients be comfortable with their intimate images being saved as computerized medical records? What blinding protocols should the doctor follow for password protection and encryption of the images during transmission and storage? Would the doctor subsequently have the right to use these images for anything other than the patient's benefit, such as for research publication without explicit consent? When should the images be erased or destroyed? What evidence will uniquely link a PGI to an individual, if patients unknowingly or intentionally share another person's image as their own?

In clinical photographs captured by doctors, the patient's role is that of a model; in PGIs, the patient is both model and photographer and, therefore, copyright ownership is complex.

Any platform transmitting and storing PGIs should prioritize data protection with robust encryption. Irrefutable informed consent should be obtained from patients seeking online consultations via PGIs, explicitly mentioning limitations and potential risks, including privacy breaches. Patients should also be enlightened regarding the custody of their images and the propriety of sharing them. Image transmission should be limited to a pre-agreed channel or medium, and only on request by their doctors or as required by their treatment protocol.

Another concern is that cellphones are potential fomites, as highlighted by Olsen et al and ensuring hygiene and cleanliness of the device is essential for personal and public health.[7]

While the convenience and accessibility of PGIs promise facilitation of patient care, this must not compromise safety, quality or privacy. Comprehensive guidelines should be developed by collaboration between healthcare administrators, regulators, and professionals, and a thorough framework formulated to ensure that quality care is delivered always within the bounds of patient respect and privacy. We believe that the use of PGIs, as an adjunct to clinical consultation, has much to recommend it, notably convenience and timeliness. However, patient awareness and education regarding the limitations are key to ensuring that this modality is not misinterpreted or misused, and that it does not become another hotbed of medicolegal conflict between patients and doctors.

Conclusion

PGIs offer a convenient option for remote patient assessments and swift evaluations for Coloproctologist. However, concerns with PGIs include image quality, potential for misinterpretation, and ethical, legal, and practical issues. Comprehensive guidelines should be developed to ensure safety and quality care is delivered within patient respect and privacy. PGIs can be a valuable tool in clinical practice, particularly for perianal pathologies, with appropriate safeguards in place.

Ethical Statement

Written informed consent was taken from the patient for the publication of these images. This is not a research article and does not require ethical committee approval.

Disclosure

The authors report no conflicts of interest in this work.

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