Isolated eyelid fixed drug eruption following paracetamol administration: a case report

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ABSTRACT

Background: Fixed drug eruption (FDE) is a recurrent cutaneous adverse drug reaction, with paracetamol-induced cases being rare and ocular involvement even more uncommon.

Case Presentation: We report a 6-year-old male who developed an isolated FDE of the right upper eyelid following paracetamol administration, presenting with erythema, edema, and subsequent hyperpigmentation. This rare presentation, with no systemic involvement, was diagnosed clinically, and management focused on strict avoidance of the offending drug. The patient recovered completely with residual hyperpigmentation after supportive management.

Conclusion: Given the limited reports of eyelid involvement in FDE, this case underscores the need for clinical awareness of its atypical manifestations to ensure timely diagnosis and appropriate management.

Keywords: Paracetamol, FDE, Allergy, hypersensitivity, eye.

Type of Article: CASE REPORT **Specialty:** Pediatrics

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Introduction

A fixed drug eruption (FDE) is a cutaneous adverse drug reaction that tends to recur at the same site following exposure to an offending drug [1,2]. On resolution, this leaves hyperpigmentation, which might persist for a long period of time and indicates the affected site [2].

Paracetamol is a widely used drug that rarely causes cutaneous adverse effects [3]. These may vary from mild pruritus to severe conditions like toxic epidermal necrolysis, acute generalized exanthematous pustulosis, and Stevens–Johnson syndrome. Paracetamol accounts for less than 1.5% of FDE cases [4].

Localized involvement of the eyelid in FDE is rare. Given its potential to mimic periorbital cellulitis or angioedema, awareness of this entity is important to avoid misdiagnosis and unnecessary interventions. We describe the case of a 6-year-old boy who presented with FDE localized to the right upper eyelid, followed by epidermal skin peeling after administration of paracetamol.

Case Report

A 6-year-old male child was admitted to the pediatrics wards following a complex febrile seizure. The parents reported an allergy to paracetamol, described as painless periorbital swelling and redness with administration of the drug at the ages of 4 and 5, which were not documented by a clinician. The time interval between the previous reaction and the current episode is 12 months. Given this history, Ibuprofen was administered for high-grade fever. The fever persisted and the patient had another episode of febrile seizures. Due to this, a rechalenge test was done and a trial of paracetamol under supervision was given the next day. 12 ml (300 mg) of oral paracetamol was given under close monitoring for any symptoms or signs of anaphylaxis. This was followed by the development of a rash on the child's right upper eyelid within 1 hour, which was painful and pruritic. The left eyelid was unaffected. In the current episode, there were no systemic signs or symptoms, such as fever, respiratory distress, or mucosal involvement (Table 1). No evidence of a rash elsewhere was noted.

Examination

On examination, the rash initially presented as erythema and edema of the right upper eyelid with no vesicles, bullae, papules, or nodules. The rash subsequently evolved from erythema to dark brown pigmentation over 4 days. This was followed by sloughing and peeling of the epidermis, and residual pigmentation changes were noted on the underlying dermis.

Management

A dermatology consultation was obtained, and the child was diagnosed with a FDE secondary to paracetamol (Figure 1).Given the localized nature of the reaction and the absence of systemic involvement, no specific pharmacologic treatment was recommended. The primary management strategy focused on strict avoidance of paracetamol to prevent future occurrences. Supportive care, including monitoring for any progression of symptoms, was advised.

The child remained stable. The family was counseled on the importance of avoiding paracetamol in the future and was advised to use alternative antipyretic medications, such as ibuprofen, when necessary. Residual hyperpigmentation was expected to persist. Parents lost to follow up.

Figure 1. *Erythema and edema localized to the right upper eyelid in the patient on day 1.*

Discussion

Fixed drug eruption represents one of the most common types of cutaneous adverse drug reactions (CADRs). It is characterized by the recurrence of lesions at identical sites upon re exposure to the causative drug [2]. The pathogenesis involves drug-specific CD8+ memory T cells that persist in the basal layer of the epidermis and dermis even after resolution of the initial reaction. Upon re-challenge, these T cells rapidly release inflammatory cytokines such as IFN -γ and cytotoxic mediators, leading to keratinocyte apoptosis and localized tissue injury. Paracetamol-induced toxic eruptions are relatively rare and usually manifest as fixed pigmenting FDE, accounting for less than 1.5% of FDE cases, though it contributes to approximately 14%-22% of CADRs in children [4,5]. This suggests that despite its common use and general safety profile, paracetamol can elicit type IV hypersensitivity reactions in genetically or immunologically predisposed individuals.

FDEs are subdivided into three main subtypes: Pigmenting, Non-pigmenting or Bullous, which can be localized or generalized. The bullous subtype, particularly generalized bullous FDE (GBFDE), may resemble Steven–Johnson Syndrome and Toxic Epidermal Necrolysis [6]. The time between administration of the offending drug and the onset of symptoms is usually within 48 hours [7]. The commonly reported locations of FDEs include the upper and lower limbs, the trunk, head, lips, and mucosal surfaces, including oral and genital mucosa [6].

Table 1. *Differential diagnosis of paracetamol-induced fixed drug eruption.*

CONDITION	KEY CLINICAL FEATURES	DISTINGUISHING FEATURES	REASON FOR EXCLUSION IN OUR CASE
Preseptal cellulitis	Unilateral eyelid erythema, swelling, warmth, tenderness; may follow trauma, insect bite, or sinus infection; often with fever and elevated inflammatory markers.	Diffuse inflammation without sharp borders; progressive course; systemic symptoms common.	The eyelid lesion was sharply demarcated, non-progressive, and recurred at the identical site after paracetamol intake without systemic features - not consistent with cellulitis.
Angioedema	Rapid swelling of eyelids or lips; non-erythematous or mildly pink; resolves within 24-48 hours; often pruritic or associated with urticaria.	Transient and migratory; no residual pigmentation or recurrence at same site.	The lesion persisted for 4 days, left post-inflammatory pigmentation, and recurred at the same location - inconsistent with transient angioedema.
Contact dermatitis	Localized erythema, vesiculation, and pruritus at site of allergen or irritant contact.	Related to topical exposure; delayed onset; confined to contact area.	No history of topical product use or contact with irritant; lesion followed oral paracetamol ingestion, excluding contact dermatitis.
Drug-induced Urticaria/ Angioedema	Multiple transient wheals or swellings; migratory; resolve without pigmentation.	Lesions appear and disappear within hours; no fixed recurrence pattern.	The lesion was fixed, pigmented, and reappeared at the same site after re-exposure, ruling out urticaria.
Fixed drug eruption (FDE)	Well-circumscribed erythematous to violaceous patch or plaque; may blister; heals with residual pigmentation; recurs at identical site upon re-exposure to the offending drug.	Characteristic fixed recurrence and pigmentation; minimal systemic involvement.	Matches perfectly: eyelid lesion developed within 1 hour of paracetamol ingestion, was erythematous-brown-black, painful and pruritic, persisted ~4 days, and recurred at the same site on re-exposure - diagnostic of FDE.

Table 2. *Comparison of reported ocular involvement in fixed drug eruption.*

AUTHOR / YEAR	DRUG IMPLICATED	AGE / SEX	SITE OF OCULAR INVOLVEMENT	SYSTEMIC OR OTHER SKIN LESIONS	KEY CLINICAL FEATURES	OUTCOME / REMARKS
Rubegni et al. [8]	Nimesulide	Adult	Conjunctiva and lower eyelid	Yes - generalized rash on trunk and limbs	Conjunctival edema, injection, erythematous plaque on lower eyelid; generalized FDE confirmed by biopsy and patch test	Recovered after drug withdrawal; patch test positive for nimesulide
Kimmatkaar et al. [9]	Paracetamol	7-year-old male	Upper eyelid (left)	No systemic lesions	Painful erythema, edema, bluish discoloration, and necrosis of eyelid skin; healed with hyperpigmentation	Complete recovery after discontinuation; recurrence prevented with avoidance
Current Case (2025)	Paracetamol	6-year-old male	Upper eyelid (right)	None	Erythematous-brown-black plaque with itching and pain; appeared within 1 hour of exposure; recurred at same site on re-exposure; resolved with residual hyperpigmentation	Localized FDE; avoided paracetamol, no recurrence; highlights awareness for pediatricians and dermatologists

Ocular involvement in FDE is exceedingly uncommon. A review of PubMed revealed only two previously reported cases with ocular manifestations [8,9] (Table 2). One involved GBFDE secondary to Nimesulide with conjunctival edema and eyelid erythema, while the other presented as isolated fixed pigmenting FDE of the eyelid with necrosis. Our case is unique in demonstrating localized eyelid FDE following paracetamol exposure, without systemic or mucosal involvement, emphasizing the variability of ocular presentations and the diagnostic challenge in differentiating it from infectious or eczematous eyelid dermatitis.

Recognition of FDE is essential for pediatricians and dermatologists due to its high recurrence risk and potential for misdiagnosis. In children, where paracetamol is frequently prescribed, awareness of its capacity to cause localized FDE – even at commonly tolerated doses – is crucial. Accurate identification can prevent repeated exposures and progression to more severe reactions such as generalized bullous FDE or overlap with Stevens–Johnson Syndrome and toxic epidermal necrolysis. Counseling caregivers to document and communicate the offending drug in future medical visits is a key preventive measure.

Oral provocation testing is the gold standard for diagnosis and should be started with subtherapeutic doses to reduce the risk of severe reaction following re-exposure to the offending drug [6]. A safer alternative is skin patch testing [10]. FDEs are usually self limiting, and patients should be counseled on avoiding the offending drug in the future, especially given the risk of worsening of symptoms on subsequent exposure [6,11,12]. Residual hyperpigmentation may persist for some time, as seen in our case [6].

Our case adds to the scarce literature on ocular FDE by identifying paracetamol as a causative agent, underscoring the need to include drug-induced FDE in the differential diagnosis of recurrent eyelid lesions in children. Moreover, it highlights the importance of early recognition and avoidance to prevent cumulative pigmentary changes or more extensive cutaneous reactions.

Conclusion

Fixed Drug Eruption is a well-recognized cutaneous adverse drug reaction, but ocular involvement remains a rare manifestation. This case of isolated upper eyelid FDE due to paracetamol adds to the limited literature on ocular presentations of the condition. Awareness of this atypical localization is crucial for early recognition, avoidance of the offending agent, and appropriate patient counseling. Given the recurrent nature of FDE and the risk of worsening severity upon re-exposure, clinicians should maintain a high index of suspicion for drug-induced eyelid lesions in recurrent cases and coumsel families regarding drug avoidance and alternative therapies.

What is new?

Ocular involvement in FDEs is rare. The search of PubMed revealed 2 reported cases with ocular involvement. The authors describe the case of a 6-year-old boy who presented with FDE localized to the right upper eyelid followed by epidermal skin peeling after administration of paracetamol.

Conflicts of interest

The authors declare that they have no conflict of interest regarding the publication of this case report.

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Consent for publication

Written consent was obtained from the parents of the patient.

Ethical approval

Ethical approval is not required at our institution to publish an anonymous case report.

Author details

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References

1. Shiohara T, Mizukawa Y. Fixed drug eruption: easily overlooked but needing new respect. Dermatology. 2002;205(2):103–4. https://doi.org/10.1159/000063891
2. Lee AY. Fixed drug eruptions. Incidence, recognition, and avoidance. Am J Clin Dermatol. 2000;1(5):277–85. https://doi.org/10.2165/00128071-200001050-00003
3. Gerriets V, Anderson J, Patel P, et al. Acetaminophen[Updated 2024 Jan 11] StatPearls [Internet]Treasure Island (FL): StatPearls Publishing; 2025 Jan.
4. Nguyen E, Gabel CK, Yu J. Pediatric drug eruptions. Clin Dermatol. 2020;38(6):629–40. https://doi.org/10.1016/j.clindermatol.2020.06.014
5. Hire RC, Sontakke S, Dakhale GN, Kamble A, Kale AS. Paracetamol induced fixed drug eruption: a case report. Int J Basic Clin Pharmacol. 2014;3(2):399–400. https://doi.org/10.5455/2319-2003.ijbcp20140429
6. McClatchy J, Yap T, Nirenberg A, Scardamaglia L. Fixed drug eruptions - the common and novel culprits since 2000. J German Soc Dermatol. 2022;20(10):1289–302. https://doi.org/10.1111/ddg.14870
7. Ben Fadhel N, Chaabane A, Ammar H, Ben Romdhane H, Soua Y, Chadli Z, et al. Clinical features, culprit drugs, and allergology workup in 41 cases of fixed drug eruption. Contact Derm. 2019;81(5):336–40. https://doi.org/10.1111/cod.13351
8. Rubegni P, Tognetti L, Tosi GM, Flori ML, Fimiani M. Ocular involvement in generalized fixed drug eruption from nimesulide. Clin Exp Ophthalmol. 2013;41(9):896–8. https://doi.org/10.1111/ceo.12103
9. Kimmatkaar P, Das S, Gandhi A, Taneja V. Paracetamol-induced fixed drug eruption presenting as eyelid skin necrosis. Indian J Ophthalmol. 2018;66(11):1627–9. https://doi.org/10.4103/ijo.IJO_448_18
10. Ozkaya E. Fixed drug eruption: state of the art. J Dtsch Dermatol Ges. 2008;6(3):181–8.
11. Andrade P, Brinca A, Gonçalo M. Patch testing in fixed drug eruptions-a 20-year review. Contact Derm. 2011;65(4):195-201. https://doi.org/10.1111/j.1600-0536.2011.01946.x
12. Nnoruka EN, Ikeh VO, Mbah AU. Fixed drug eruption in Nigeria. Int J Dermatol. 2006;45(9):1062–5. https://doi.org/10.1111/j.1365-4632.2006.02912.x

Summary of the case

1	Patient (Gender, Age)	6 years, male
2	Final diagnosis	FDE due to paracetamol
3	Symptoms	Rash, pain
4	Medications	Due to paracetamol treatment is avoidance of the drug
5	Clinical procedure	None
6	Specialty	Pediatrics dermatology