Journal of Neonatal Surgery
ISSN (Online): 2226 -0439
Vol. 14, Issue 27s (2025)
https://www.jneonatalsurg.com

OPEN ACCESS

Recurrent Episcleritis: Unveiling The Causes And Systemic Links

Saisangeetha A[1*], Aparna AC[2]

[1*]Dept of Ophthalmology Karpaga Vinayaga Institute of Medical Sciences & Research Centre, GST Road, Chinna Kolambakkam, Madhuranthagam Taluk, Chengalpattu District – 603308,

Email ID: saitwiity@gmail.com,

ORCID ID: 0009-0005-9300-6480

[2]Dept of Ophthalmology Karpaga Vinayaga Institute of Medical Sciences & Research Centre, GST Road, Chinna Kolambakkam, Madhuranthagam Taluk, Chengalpattu District – 603308,

Email ID: draparnaac@gmail.com

Cite this paper as: Saisangeetha A, Aparna AC, (2025) Recurrent Episcleritis: Unveiling The Causes And Systemic Links. *Journal of Neonatal Surgery*, 14 (27s), 1166-1172.

ABSTRACT

Background: Episcleritis is a common, typically benign ocular condition characterized by inflammation of the episcleral tissue. While often self-limiting, recurrent episcleritis may signal underlying systemic disease, including autoimmune conditions and latent tuberculosis (TB), particularly in TB-endemic regions like India.

Objective: To investigate the clinical profile, systemic associations, and treatment outcomes in patients presenting with recurrent episcleritis.

Methods: A cross-sectional study was conducted over six months at a tertiary care center involving 76 patients diagnosed with recurrent episcleritis. Detailed ocular and systemic evaluations were performed, including Mantoux testing, autoimmune markers, and chest imaging. Patients were followed up for a minimum of two months to assess recurrence and treatment response.

Results: The majority of patients were female (61%) and aged between 30–50 years, with a mean age of 43.03±9.06 years. Unilateral (91%) and diffuse (80%) episcleritis were the most common presentations. Systemic associations were identified in 31 patients (41%), of which 26 (34%) were Mantoux positive. Among these, six patients with latent or prior TB-related findings were initiated on anti-tubercular therapy (ATT), resulting in complete resolution with no further recurrences.

Conclusion: Recurrent episcleritis may be an ocular manifestation of systemic diseases, especially latent tuberculosis in endemic regions. Routine Mantoux testing and targeted systemic evaluation are critical in such cases. Initiation of ATT in selected patients demonstrated favorable outcomes, reinforcing the need for a multidisciplinary approach in managing recurrent episcleritis.

Keywords: *Episcleritis, recurrent episcleritis, tuberculosis, Mantoux test, ocular inflammation, systemic associations, anti-tubercular therapy*.

1. INTRODUCTION

Episcleritis is a prevalent and typically benign ocular condition that is characterized by inflammation of the episclera, which is a thin, transparent layer of tissue situated between the sclera and the conjunctiva. This condition manifests as a localized redness of the eye, often accompanied by mild discomfort, irritation, or a sense of dryness. The inflammation involved in episcleritis is usually restricted to the episcleral tissue, and although it can cause noticeable eye redness, it is generally not associated with severe pain. In some instances, the clinical appearance of episcleritis may resemble scleritis, another inflammatory condition affecting the eye, but a key difference lies in the fact that in episcleritis, the inflammation and erythema (redness) are confined to the episclera rather than the deeper scleral tissues.

Episcleritis is generally self-limiting, meaning that, in many cases, it resolves without the need for medical intervention. However, some patients may experience recurrent episodes, which can complicate the condition and lead to significant challenges in managing their symptoms. Frequent recurrences of episcleritis can have a negative impact on a patient's quality of life, affecting their vision, daily activities, and emotional well-being. While episodic and recurrent episcleritis

is usually a mild and non-threatening condition, it is important for clinicians to recognize that repeated occurrences may be associated with systemic diseases or infections, which could complicate diagnosis and treatment.

In terms of its causes, the etiology of episcleritis is often idiopathic. However, in some cases, the condition may be linked to certain underlying systemic diseases(1). For instance, autoimmune conditions such as rheumatoid arthritis, lupus, and inflammatory bowel disease have been identified as possible contributors to the development of episcleritis. These diseases can cause widespread inflammation in the body, including in the eyes, leading to the symptoms seen in episcleritis. Despite the generally mild nature of episcleritis, when episodes recur, it is important to consider the possibility of an underlying systemic condition, as this may influence both the treatment approach and the long-term prognosis for the patient. Recent studies have shed light on the potential relationship between recurrent episcleritis and latent tuberculosis (TB). According to research by Amit Parwal et al., ocular associations with tuberculosis are observed in approximately 1-2% of TB cases, with the primary areas affected including the conjunctiva, cornea, uvea, and sclera(1). This association suggests that tuberculosis, even in its latent form, may be a contributing factor to recurrent episcleritis, highlighting the importance of a comprehensive evaluation of potential systemic causes when diagnosing patients with persistent or recurrent eye inflammation. This emerging connection between recurrent episcleritis and tuberculosis further underscores the need for clinicians to consider systemic factors when managing the condition, especially in cases where the episcleritis is recurrent or difficult to resolve.

Understanding the underlying causes and systemic links associated with recurrent episcleritis is crucial for the development of more effective treatment strategies. This includes considering any underlying systemic disease that may require targeted therapy in addition to the treatment of the ocular symptoms themselves. Additionally, such understanding may help clinicians better predict patient outcomes and reduce the risk of complications from recurrent episodes of episcleritis. Given the potential for association with serious systemic conditions, proper investigation and diagnostic testing are vital components of clinical practice when managing cases of recurrent episcleritis. This article aims to offer a thorough and detailed exploration of episcleritis, its clinical manifestations, and its associations with systemic diseases, with the goal of improving both diagnosis and treatment approaches in clinical settings.

2. MATERIALS AND METHODS

A cross-sectional study was done in our institution for a period of 6 months among the patients diagnosed with recurrent episcleritis attending our OPD. The study was conducted only after obtaining due permission from the ethical committee. All 76 patients consented to participate in the study were included and they were followed up for at least two months. Patients who either withdrew from follow-up or chose not to participate were excluded from the study. A detailed history along with a comprehensive ocular and systemic examination was performed on all patients, which included best corrected visual acuity assessment using Snellen's chart, slit-lamp examination of the anterior segment and fundus examination with +90 D lens and indirect ophthalmoscopy with +20 D lens was done and findings were recorded. Investigations like complete blood counts, erythrocyte sedimentation rate, Mantoux test, rheumatoid factor, and anti-nuclear antibody tests were done to determine the underlying systemic associations. Radiological investigations like Chest X-ray, High-resolution CT scan of the chest was done. Treatment details were carefully recorded, and patients were closely monitored through regular follow-ups to assess treatment efficacy and monitor for any recurrence of episcleritis.

3. RESULTS

Among the 76 patients with recurrent episcleritis in our study the maximum number of patients belong to age group of 30 – 50 years with peak incidence in the fifth decade. The mean age of presentation is - 43.03+/- 9.06 years (Table 1). There was a female preponderance in the study (female-46) (male -30) with (3)female: male ratio of 1.53:1 (Table 2). Recurrent episcleritis was unilateral (Fig-1) in 91% and bilateral (Fig-2) in 9% cases (Table 3). Diffuse type was noted in 80% of cases and nodular (Fig-3)in 20% cases (Table 4).

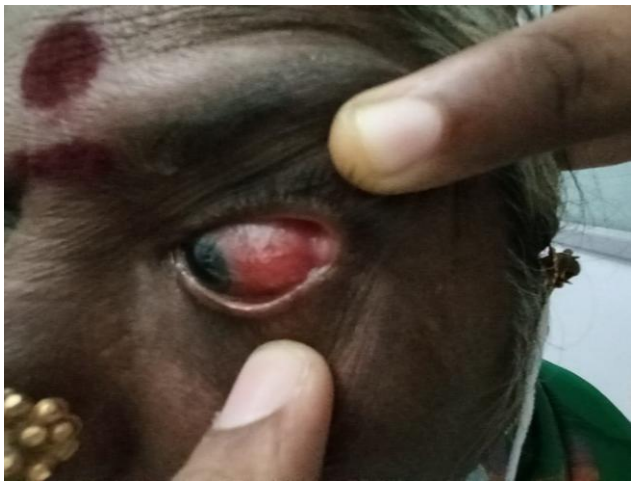

Fig -1 Left eye unilateral episcleritis(Diffuse type)

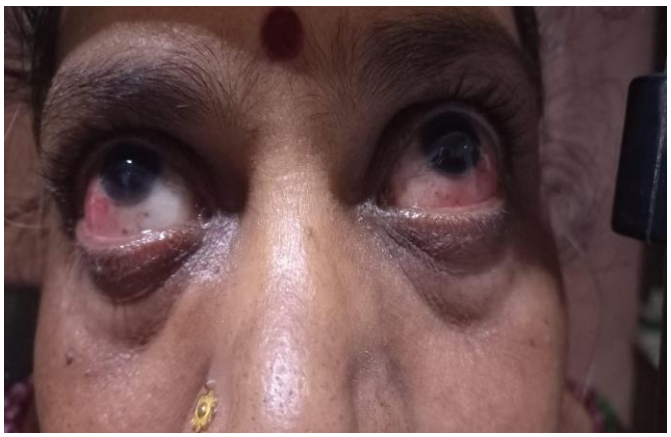

Fig -2 A case of bilateral episcleritis(Diffuse type)

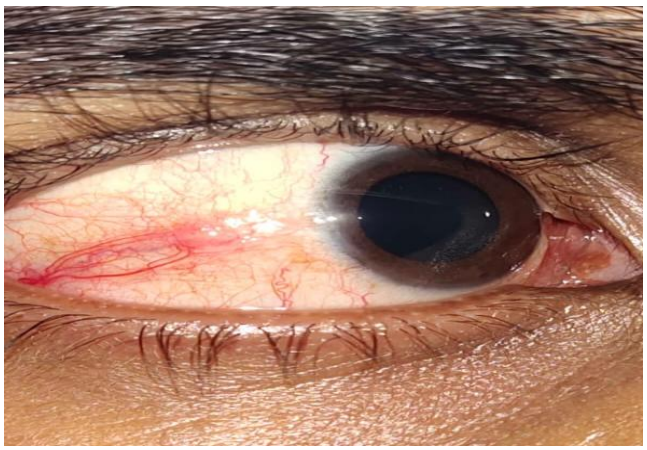

Fig – 3 A case of Right eye nodular episcleritis

Among the 76 patients studied, 31 were found to have systemic associations (Table 5). Laboratory investigations revealed that 26 patients were Mantoux positive, 3 tested positive for rheumatoid factor, and 2 were positive for antinuclear antibodies. The results of the Mantoux test were interpreted according to the National TB Guidelines in India. In our study, most cases demonstrated induration ranging from 20 to 30 mm, while some cases exhibited induration exceeding

30 mm(Fig-4). Of the 26 Mantoux-positive patients, 17 showed no significant clinicoradiological signs of pulmonary tuberculosis but 2 among them experienced more frequent recurrences of episcleritis. 5 had a history of prior treatment for pulmonary tuberculosis, and 4 with no treatment history of TB had healed pulmonary TB lesions on CT. Among the six patients who tested positive for the Mantoux test, two with frequent recurrences and four with old Koch's lesions identified on CT scans were started on antitubercular therapy (ATT). This treatment resulted in significant improvement, with no subsequent recurrences observed

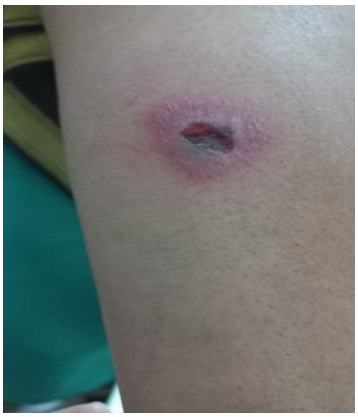

Fig-4 Mantoux test

Table 1: Age distribution

Age distribution	Frequency	Percentage
20-30	13	17.1
30-40	22	28.9
40-50	32	42.1
50-60	5	6.6
60-70	4	5.3
Total	76	100

Table 2: Sex distribution

Gender	No.of cases	Percentage%
Male	30	39
Female	46	61
Total	76	100

Table 3: Laterality

Laterality	No. of cases	Percentage%
Unilateral	69	91
Bilateral	7	9
Total	76	100

Table 4: Types of episcleritis

Types	No.of cases	Percentage%
Diffuse	61	80
Nodular	15	20
Total	76	100

Table 5: Systemic associations

Systemic associations	No. of cases	Percentage%
Tuberculosis	26	34
Rheumatoid arthritis	3	4
Systemic lupus erythematosis	2	3

4. DISCUSSION

In this discussion, we examine the clinical implications of episcleritis, with a focus on its often benign nature, while highlighting the potential for recurrence. Although episcleritis is typically considered a self-limiting condition that resolves without major complications, its recurrent nature poses significant challenges in clinical management. Consistent with previous research, our study found that episcleritis was more common in females than in males, aligning with the established gender predisposition observed in the literature. The majority of patients in our study were between the ages of 30 and 50 years, with the highest incidence occurring in the fifth decade of life, further supporting the age distribution trends seen in other studies.

The most common subtype of episcleritis observed in our study was diffuse episcleritis, followed by nodular episcleritis. These findings are consistent with those of other studies, reinforcing the general pattern of episcleritis subtypes. Furthermore, the vast majority of episcleritis cases in our study presented unilaterally, in line with earlier studies that report unilateral presentation as the most common form of the condition. These observations emphasize the typical clinical features of episcleritis, which, despite its relatively mild nature, can still cause significant discomfort and inconvenience for affected individuals.

A key aspect of our study was the assessment of systemic associations with episcleritis. While the majority of episcleritis cases in our cohort were not linked to any underlying systemic illness, 31% of the patients had a systemic condition that was potentially related to their episcleritis. Notably, among these 31 patients, 26 had a positive Mantoux test, indicating possible latent tuberculosis (TB). Additionally, three patients were rheumatoid factor positive, and two tested positive for antinuclear antibodies (ANA). This finding highlights the importance of considering systemic conditions when evaluating patients with recurrent or persistent episcleritis. The high prevalence of Mantoux positivity in our cohort is particularly significant, given that tuberculosis remains widespread and endemic in our country. This observation supports the notion that latent TB could be an important factor to consider in the differential diagnosis of recurrent episcleritis.

Interestingly, our findings differ somewhat from those of Mohammed Anjum Iqbal et al., who concluded in their study that most patients with episcleritis had systemic associations, with rheumatoid arthritis, systemic lupus erythematosus (SLE), and psoriasis being the most common underlying conditions. This contrasts with our study, where these specific associations were less common. Nevertheless, we did observe systemic links to episcleritis, with tuberculosis emerging as a prominent factor, echoing the findings of Karunakaran et al (4). Their research identified tuberculosis as the most frequent systemic association in patients with episcleritis and scleritis, a result that is consistent with our own study.

Our analysis also revealed some noteworthy gender-related patterns in systemic associations with episcleritis. Of the patients with identified systemic conditions, 67.7% were female, while 32.3% were male. This suggests that systemic diseases associated with episcleritis may be more prevalent in female patients, although further research is needed to better understand this gender discrepancy. These findings are important for clinicians to consider when evaluating the systemic implications of episcleritis, as gender-based differences could influence both the likelihood of systemic associations and the treatment approach.

The Mantoux test results from our study provide further insight into the potential role of tuberculosis in recurrent episcleritis. A significant proportion of patients showed induration greater than 30 mm, with most indurations ranging between 20 and 30 mm. These results prompted a series of clinicoradiological investigations to assess the presence of active or latent TB. Among the patients tested, 15 exhibited no signs of pulmonary tuberculosis, while five had a history of completed TB treatment. Four patients had old Koch's lesions visible on CT scans, though they were asymptomatic

and had no history of TB treatment. Two patients presented with recurrent episcleritis, and among them, six patients—four with old Koch's lesions and two with recurrent episcleritis—were referred to a pulmonologist for further evaluation.

Following evaluation by the pulmonologist, these patients were started on anti-tubercular therapy (ATT). Remarkably, all six patients demonstrated significant improvement in their symptoms, with no subsequent recurrence of episcleritis. This outcome suggests that the treatment of latent TB with appropriate anti-tubercular therapy can effectively resolve recurrent episcleritis associated with tuberculosis. These findings underscore the importance of considering latent TB as a potential cause of recurrent episcleritis, even in the absence of overt pulmonary symptoms.

In conclusion, the clinical implications of our study emphasize the need for careful consideration of systemic associations in the management of recurrent episcleritis. While the condition is generally benign and self-limiting, its potential link to systemic diseases—particularly tuberculosis—warrants further investigation in patients presenting with recurrent or persistent episodes. Clinicians should remain vigilant in screening for underlying conditions, including latent tuberculosis, as early identification and treatment of these systemic associations can lead to significant improvement in patient outcomes and reduce the likelihood of recurrence.

Table 6: Gender representation

Variable	Female N (%)	Male N (%)	P value
Unilateral	42 (60.9)	27 (39.1)	0.8
Bilateral	4 (57.1)	3 (42.9)	
Rheumatoid factor Positive	2 (66.7)	1 (33.3)	0.8
ALA Positive	2(100)	0	0.2
Mantoux positive	17(65.4)	9 (34.6)	0.5

Table 7: Mantoux test

Mantoux test readings	No.of cases
10-15mm	4
15-20mm	6
20-30mm	14
>30mm	2
Total	26

5. CONCLUSION

Episcleritis are prevalent condition encountered in ophthalmology outpatient departments. Their frequent association with underlying systemic disorders necessitates a thorough assessment of the systemic health of affected patients. Early diagnosis and appropriate management of these systemic conditions have been instrumental in reducing both systemic and ocular morbidity. Though there are no physical symptoms exhibited by patients, Mantoux should be done in all suspected cases as it serves as a screening tool in diagnosing latent tuberculosis which is the most common cause of episcleritis in Indian population as predicted in our study.

The female population in middle age is particularly vulnerable to these conditions. A comprehensive approach, including meticulous history taking, clinical examination, and targeted investigations, is crucial for identifying associated systemic disorders. When necessary, referrals to medical specialists are made, and managing the systemic disorder often leads to a reduction in ocular morbidity. Ocular manifestations can sometimes be the initial signs of systemic disorders, prompt diagnosis is essential for improving overall patient outcomes.

6. LIMITATIONS

- The study involved a limited sample size.
- Many patients were lost to follow-up despite the recurrent nature of episcleritis, because symptoms are generally mild and complications that could be life-threatening are infrequent.

REFERENCES

1. Watson PG, Hayreh SS. Scleritis and episcleritis. Br J Ophthalmol. 1976 Mar 1;60(3):163–91.
2. Porwal A. Rare Presentation of Nodular Episcleritis with Tuberculosis in A 12 Year Old Girl: A Case Report. Delhi J Ophthalmol [Internet]. 2021 Apr 1 [cited 2024 Jun 19];31(4). Available from: https://www.djo.org.in/articles/31/4/Rare-Presentation-of-Nodular-Episcleritis-with-Tuberculosis-in-A-12-Year-Old-Girl-A-Case-Report.html
3. Postgraduate in Ophthalmology, Sri Ramachandra University, Chennai, India, Anjum Iqbal DrM, Annamalai DR, Associate Professor of Ophthalmology, Sri Ramachandra University, Chennai, India, Muthukumar DProfM, Senior Consultant in Ophthalmology, Sri Ramachandra University, Chennai, India. Clinical features, visual outcome and association with systemic disease in patients with episleritis and scleritis. A study of 50 eyes. Int J Med Res Rev. 2016 May 31;4(5):707–12.
4. Selvaraj D, Karunakaran R, Marudhachalam S, Thiyagarajan L. A cross-sectional study of systemic disorders in patients with episcleritis and episcleritis. Indian J Clin Exp Ophthalmol. 2022 Dec 28;8(4):504–8.
5. Promelle V, Goeb V, Gueudry J. Rheumatoid Arthritis Associated Episcleritis and Scleritis: An Update on Treatment Perspectives. J Clin Med. 2021 May 14;10(10):2118.
6. Chen YW, Poon YC, Yu HJ, Kuo MT, Fan PC. Experience of scleritis and episcleritis at a tertiary center in Southern Taiwan. Taiwan J Ophthalmol. 2015 Mar;5(1):19–22.