

## **Research Article**

# **Prevalence of Prepapillary Vascular Loop**

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**Abstract:** The purpose of the study was to evaluate the prevalence of a prepapillary vascular loop. We retrospectively analyzed 7,856 patients at our hospital for health screening during the 1-year period. All patients, including 4,421 men and 3,435 women, were analyzed using fundus photographs. The overall prevalence of prepapillary vascular loop was found to be 0.115% (9/7,856). Out of nine patients with prepapillary vascular loops, two were men (2/4,421; 0.045%) and seven were women (7/3,435; 0.204%). Four patients had arterial loops, while another four had venous loops. Seven loops were located in the upper optic disc region, while one was located in the lower region. In one patient, multiple loops were detected, and one patient had a prepapillary vascular loop in both eyes. Among the patients who underwent health screening, the prevalence of prepapillary vascular loop was found to be 0.115%. These results may aid in explaining clinically rare conditions.

**Keywords:** Prepapillary vascular loop, prevalence, health screening

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## **INTRODUCTION**

Prepapillary vascular loops are rare congenital vascular malformations of either the retinal arterial or venous system [1, 2]. They are usually asymptomatic and are detected incidentally during routine fundus examinations; however, these malformations are associated with retinal vascular occlusive diseases and recurrent vitreous bleeding [1-3].

Prepapillary vascular loops are rare, with the incidence ranging from approximately one in 2,000 to one in 9,000 patients [4, 5]. Bilaterality occurs in 9–17% of these cases [6]. In this study, we report the prevalence of a prepapillary vascular loop.

## **MATERIALS AND METHODS**

We conducted a retrospective survey of patients who visited the Jichi Medical University hospital for health screening from January 2014 through December 2014. A total of 7,856 patients, including 4,421 men and 3,435 women, were analyzed using fundus photographs taken with a non-mydiatric fundus camera.

## **RESULTS**

The overall prevalence of prepapillary vascular loop was 0.115% (9/7,856). Out of the nine patients with prepapillary vascular loops, two were men (2/4,421; 0.045%) and seven women (7/3,435; 0.204%). Among the nine patients, four had arterial loops (Fig. 1 left) and four had venous loops (Fig. 1 right).

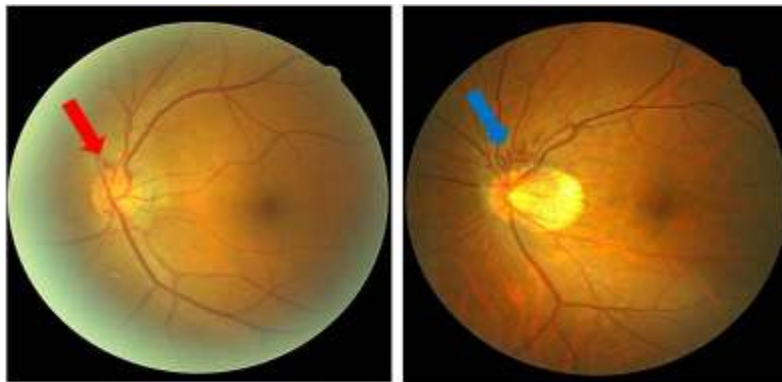
In addition, seven were located in the upper optic disc region, while one was located in the lower region. In one patient, multiple loops were detected (Fig. 2).

One patient had prepapillary vascular loops in both the eyes (Fig. 3).

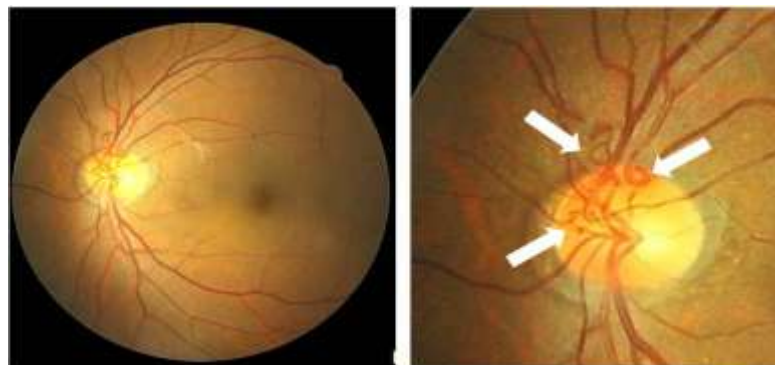
## **DISCUSSION**

To the best of our knowledge, there are no reports on the prevalence of prepapillary vascular loops in patients who underwent health screening. In the largest series on prepapillary vascular loops, Degenhart *et al.* [1] stated that the incidence was approximately one per 9,000 outpatient visits. According to their report, majority of prepapillary vascular loops are arterial (52/63; 83%). In addition, the distribution of retinal arterial vessels supplied by loops was estimated to be: (a) inferior papillary, 35%; (b) superior papillary, 30%; (c) inferior temporal branch, 20%; (d) inferior and superior nasal branches, 5%; (e) superior nasal branch, 5%; and the remaining were supplied by retinal arteries not associated with the loops or by cilioretinal arteries.

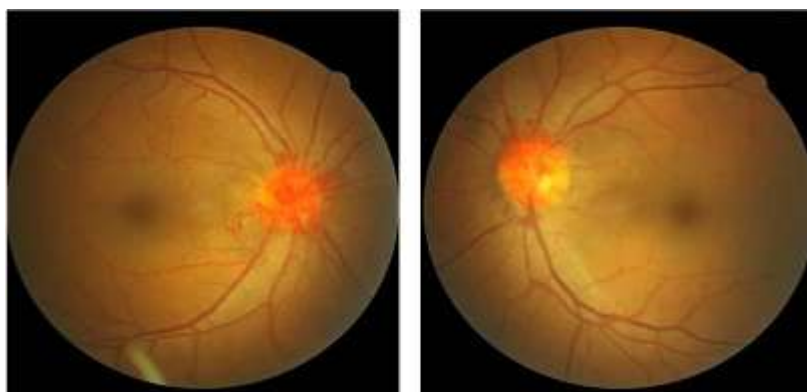
In present study, the overall prevalence of prepapillary vascular loop was 0.115%. The frequency of prepapillary vascular loops was higher in women, with no significant difference between arterial and venous loops. Moreover, these loops were prominently located in the upper optic disc region.



**Fig. 1: Left: The left fundus showed a prepapillary arterial loop (red arrow); Right: The left fundus showed a prepapillary venous loop (blue arrow)**



**Fig. 2: Left: Left fundus showed prepapillary arterial loops; Right: High magnification image of the left fundus showed three loop formations (white arrows)**



**Fig. 3: Bilateral prepapillary vascular loop**

## CONCLUSION

These results may aid in explaining clinically rare conditions.

## REFERENCES

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