A descriptive study was done by Genereau et al. on patients from the French Vasculitis Study to assess the frequency of temporal artery involvement in different types of systemic necrotizing vasculitis (SNV).[7] From their cohort of 141 consecutive patients undergoing TAB for suspected GCA, they found 6 patients with SNV; they then accumulated 21 other patients with SNV identified on TAB retrospectively from collaborating institutions for a total of 27 patients diagnosed with SNV by support of TAB. Only 2 were known to have SVN before the TAB. They found that cephalic symptoms such as jaw claudication, clinically abnormal temporal arteries, and neuro-ophthalmologic symptoms were present in 81% of patients. In 70% (19 patients), the diagnosis of SNV was based on findings of the TAB. In the majority of these cases, temporal artery localization of the SNV was the first sign of vasculitis. Esteban et al. reviewed 28 patients in whom small vessel vasculitis in the soft tissue surrounding a spared temporal artery was the first histologic finding that led to the diagnosis of vasculitis.[10] They identified 3 patients with SNV but did not further subclassify them. Finally, Hamidou et al. retrospectively identified 7 patients with SNV who underwent TAB for cephalic symptoms.[8] They concluded that TAB is a simple tool to diagnose systemic vasculitis, but the histopathological findings need to be correlated with the clinical findings as it does not always discriminate between SNV and classic GCA.

This case highlights the importance of including other SNV in the differential diagnosis of GCA. Non–giant cell temporal arteritis is rare but is a documented finding in SNV; therefore, TAB should be considered as a site for biopsy when cephalic symptoms are present in the context of systemic vasculitis. The key to the correct diagnosis of SNV in TAB is a good arterial specimen with surrounding soft tissue to include small vessels as well as proper communication with the pathologist.[11]

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Innovative model for telemedicine-based screening for diabetic retinopathy in the developing world

The magnitude of diabetic retinopathy (DR) in the developing world and the need for periodic screening are universally accepted.[1] In India the numbers to be screened —across geographies, poor infrastructure, and resource constraints—make it a daunting proposition. Successful public health programs such as the National Diabetic Retinopathy Screening Service in the UK need expensive hardware, excellent network connectivity, and dedicated manpower.[2] We have run a DR screening and awareness program in rural India for the last 2 years, conducting 41 camps. Our model has 3 components as recommended

by the World Health Organization: involvement of the local community, affordable innovative telemedicine technology, and dissemination of information by the press.[3]

Engagement of the local community was achieved through a women's self-help group, "Tanishka," with over 70 000 members all over the state of Maharashtra in western India. They arranged for the venue, generated awareness before the event, and ensured that the diabetic patients in the community attended. Their presence ensured local knowledge, local networking, and long-term engagement of the detected patients. Screening was free and restricted to diabetic patients. In total, 3834 diabetic patients were screened and 507 (13.22%) were found to be affected with DR. Our model focussed on DR detection, not grading.

The use of an innovative retina camera, Fundus on Phone (Remidio Innovative Solutions Private Limited, Bengaluru, India), was the technology that made the program possible (Fig. 1) Fundus on Phone is a low-cost ($400), truly portable retinal camera (900 g). It consists of an innovative optical design that piggybacks on a commercially available smart phone to acquire and transmit retinal images (see Fig. 1). Technically, the camera has a 45° field of view, a 33-mm working distance, +20D to −20D adjustment, and an optical magnification of 12×. The warm white light-emitting-diode light source is powered by a 1500 mAh Li-ion battery (7 hours' back-up in the field). Camera sensor resolution is determined by the smart phone used, always greater than 8 megapixels. An application allows patient data to be stored folder-wise. Each photograph has identification data in the corner to prevent any mix-ups during the acquisition, transfer, and reporting process (Fig. 2) Pictures are transferred using the application Whatsapp to the reading centre, where reporting is done almost in real time. Most areas are covered by mobile network allowing good connectivity.

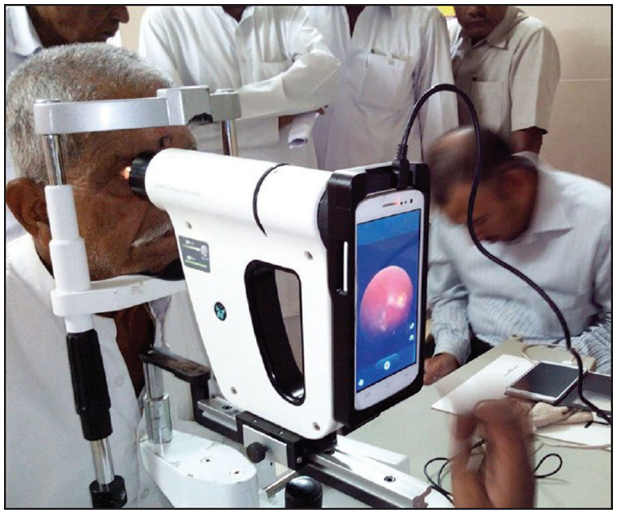

Fig. 1—Fundus on Phone device coupled with a standard smart phone.

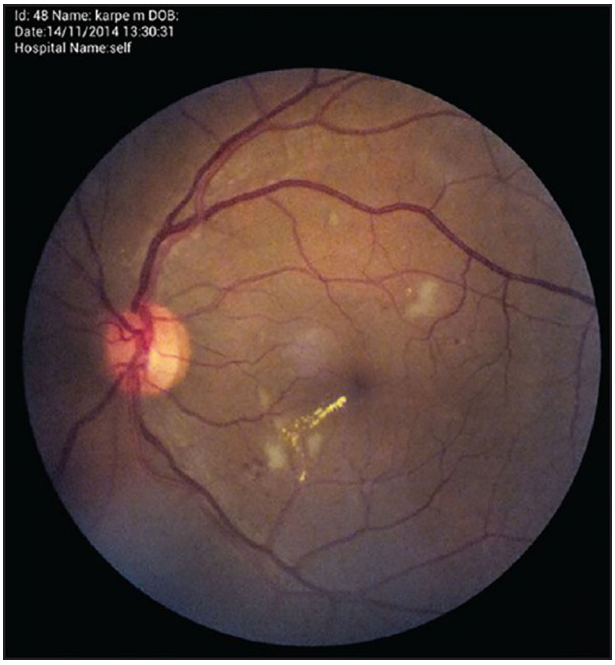

Fig. 2—Photograph taken by Fundus on Phone (FOP) showing image generated by FOP revealing focal maculopathy. Note patient identification details in upper-left corner.

The image acquisition was entirely done by nonphysician operators. Data compression can affect the accuracy of digital images. Our images were 110 kb or more in size, and so above the recommended standard.[4] Mydriatic photography was performed with due diligence as in the English National screening program for diabetic retinopathy (ENSPDR).[5] Nonmydriatic photography results in poor image quality in tropical countries because of small mesopic pupillary size and nuclear sclerosis in the target age group. A 45° fovea-centred photograph of each eye was taken.[6]

The third pillar of our model was that each event was reported in the local press, generating awareness. This spread the message of the role of annual screening for timely detection and blindness prevention in DR.

We see this as a replicable model in other developing countries.

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