Eye changes in Nigerian patients with Alopecia Areata

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Eye changes have been reported in patients with Alopecia Areata. There are no local reports of this association. We decided to find out the prevalence and to document the various eye changes in patients presenting with Alopecia Areata in this environment. We examined 13 patients presenting with clinical features of Alopecia Areata. A structured questionnaire was administered to gather relevant biodata, duration of illness and previous drug history. Nine of them showed eye changes, some of which had been previously described which include lens opacities, refractive errors and retinal abnormalities. Unlike what had been previously described, 4 of our patients had definite early posterior subcapsular cataracts. We suggest that patients with Alopecia Areata should have ophthalmological examination as part of their initial assessment.

KEY WORDS: ***Alopecia areata; cataract; hyperplasia of retinal; pigment; epithelium***

Alopecia Areata (Aa) accounts for 2% of patients seen in the dermatology clinic of the University College, Ibadan (unpublished observation).

The aetiology of Aa remains unknown but a few factors have been implicated in its pathogenesis, these include patients' genetic constitution, the atopic state, non-specific immune and organ specific auto-immune reactions and emotional stress.

The various clinical forms include asymptomatic loss of hair from one or many well-circumscribed patches, diffuse hair loss without obvious margins, marginal alopecia usually affecting the occipital region known as the Ophiasis type, total hair or universal hair loss.

Alopecia Areata has been associated with other diseases e.g. Auto-immune disorders, eye, and nail changes[1-5]. Muller and Winklemann[1] speculated that involvement of the lenses in the eyes and involvement of the nails could suggest a generalised ectodermal reactivity in this condition. Muller and Brunsting[2] recorded 5 cases of cataract in patients with Aa.

Summerly and Watson[3] had also documented symptomless punctate lens opacities in patients with Aa although they found similar findings in the control population. Horner's syndrome, ectopia of the pupil, iris atrophy or tortuosity of the fundal vessels were reported by Langhof and Lenke[6].

As the cost of health care continues to rise, emphasis in the tertiary institutions is now based on making early diagnosis, ordering only essential investigations and engaging relevant specialist care. We decided to study the incidence of eye complications in patients with Alopecia Areata in this environment and to document such findings. As far as we know this is the first report of eye changes in patients with Alopecia Areata in Nigerians.

Patients and Method

Thirteen patients with clinical diagnosis of Aa were recruited into the study with their consent. Patients who had been on steroid therapy prior to presentation were excluded.

A structured questionnaire with information on biodata, duration of symptoms and history of associated illness was obtained. Previous drug history was documented.

Patients were examined for the clinical type of Alopecia.

(a) Patchy; one or more well defined area of hair loss.
(b) Diffuse; hair loss without well defined margins.
(c) Ophiasis; marginal alopecia usually affecting the occipital area.
(d) Totalis; loss of most or all the scalp hair.
(e) Universalis: generalised loss of body hair.

Patients were also examined for the various nail changes, viz: pitting, thin brittle nails, longitudinal ridging and koilonychia.

A full ophthalmological assessment was carried out

on each patient. This involved the use of the slit lamp biomicroscope, direct ophthalmoscopy and retinoscopy (to correct refractive errors where present). Signs sought out for included cataracts, refractive errors. Horner's syndrome, ectopia of the pupil, iris atrophy (with transillumination), retinal pigment abnormalities, tortuosity of the retinal vessels, and changes in the intraocular pressures, with the Goldman's applanation tonometer.

Results

Thirteen patients were recruited into the study with clinical diagnoses of Aa.

Figure 1 shows hair loss in one of the patients.

The age range was 6–65 years with 9 of the patients (67%) below 25 years of age.

There were 5 males and 8 females with a male to female ratio of about 1 : 1.6.

Ocular signs were found in 9 (69%) out of the 13 patients. These included early cataracts in 4 patients, increased retinal pigmentation in 3 patients and tortuosity of the retinal vessels in 1 patient, some patients had more than 1 ocular signs (Table 1).

The cataracts were mainly of the posterior subcapsular type.

Table 1: **Summary of eye changes in patents with Alopecia Areata (U.C.H., Ibadan)**

Patient	Age	Sex	Duration of Aa	Clinical Pattern	Atopic Disease	Nail Disorder	Refractive Error	Cataract	Retinal Anomaly
1	42	F	1	Patchy	–	–	Hypermetropia	–	Increased pigmentation
2	6	F	2	Ophiasis	–	–	–	–	–
3	17	F	0.42	Patchy	–	–	–	Early	Tortuosity of retinal vessels
4	17	M	8	Patchy	Allergic Rhinitis	Pitting	Astigmatism	–	–
5	65	F	20	Diffuse	–	–	–	Early	–
6	14	F	7	Diffuse	–	–	–	–	–
7	45	F	20	Ophiasis	–	–	Hypermetropia	–	–
8	45	M	0.17	Patchy	–	–	–	–	–
9	12	F	1	Ophiasis	–	Pitting	–	Early	Increased pigmentation
10	19	M	0.5	Patchy	–	–	Myopia	–	–
11	23	M	0.5	Patchy	–	–	–	–	–
12	22	M	20	Patchy	Allergic Rhinitis conjunctivitis	Pitting	Myopia	–	–
13	38	F	3	Patchy	–	–	–	Early	Increased pigmentation

Three patients had previous eye problems. Patient 1 was on treatment for glaucoma, and patient 12 had allergic conjunctivitis. It was also interesting that the three patients that had pitting of the nails had ocular signs (Table i). Two had refractive errors, one also suffered from allergic conjunctivitis and the third had an early cataract and increased retinal pigmentation.

Two of our patients were atopic, they had allergic rhinitis and allergic conjunctivitis. There was no correlation between the severity and the clinical types of the alopecia and the eye changes.

Discussion

Eye changes in Aa have been documented by various authors[1–5] but there are no reports in this environment. It is of note that 69% of the patients seen had ocular signs. Summerly and Watson[3] documented symptomless punctate lens opacities in patient with Aa and in the control population. Four of our patients had definite early posterior subcapsular cataracts and not punctate lens opacities, and 2 of them were 12 and 17 years old. Posterior subcapsular cataracts have been described in young atopics[7] but both patients were not atopic. The third and forth patients were 38 and 65-year old respectively. The latter's vision had already been reduced to 6/18 in the worse eye due to the early cataract. Muller and Winkleman[1] had suggested that involvement of the lenses and the nails indicated generalised ectodermal reactivity in Aa. However, in our study, only one patient had both lens and nail involvement, and this was a 12-year old girl. They also noted that Aa was associated with errors of refraction that was confirmed in our study as 5 out of the 13 patients suffered from this condition. In the study by Brown, Pollard and Janet[5]. 9 patients with Aa were reported with ocular changes. These included exopthalmos, iris colour changes, discrete pigmentation and pigment hyperplasia of the choroid and retinal pigment epithelium which showed as increased pigmentation of the retina. These other changes were not found in any of our patients although a mild change in iris colour from dark brown to a lighter brown may be difficult to notice in our patients whom all had dark brown irides.

The involvement of other tissues in the eye not derived from the ectoderm e.g. the blood vessels suggest that the theory of ectodermal hyperactivity put forward by Muller[1] may not explain everything. Involvement of other tissue may be due to molecular mimicry, i.e., the various tissues involved may share a common antigen that is reacting with an unknown antibody. In conclusion, ocular changes are quite common in patients with Aa, especially in those with associated nail changes, and it is suggested that all patients with this condition especially those with nail changes, should have a full ophthalmological evaluation including slit lamp biomicroscopy and fundoscopy.

A larger study of this condition will help to ascertain other ocular findings documented in other studies elsewhere.

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