ANSWER TO PHOTO QUIZ (PAGE 383)

BACK AND JOINT PAIN ACCORDING TO GOOD OLD VIRCHOW

DIAGNOSIS

The typical skin discoloration and spinal changes, combined with a positive family history, fit with ochronosis caused by alkaptonuria, an inborn error of metabolism. Ochronosis was first described and named by Virchow in 1866.[1]

Alkaptonuria is a rare autosomal recessive disorder with a mutation in the homogentisate 1,2-dioxygenase (HGO) gene. Absence of the HGO enzyme results in accumulation of homogentisic acid (HGA), an intermediate in the tyrosine degradation pathway. Excretion of high HGA levels by the kidneys leads to darkened urine, a characteristic symptom of alkaptonuria that is usually present from birth.[2] This patient did indeed have increased HGA levels, confirming alkaptonuria.

Accumulation of HGA and its metabolites in connective tissues causes pigmentation and eventually deterioration of large joints (ochronosis), followed by involvement of the cardiovascular system, kidneys, skin and glands. Ochronotic changes usually develop at a relatively young age (around the third decade of life), leading to damage to joints. Other complications include aortic valve stenosis, ligament ruptures and urolithiasis.[3] Worldwide, the disease has a prevalence of one in 250,000-1,000,000 births, with more frequent reports in genetically isolated populations.[2] Although alkaptonuria does not reduce life expectancy, it considerably diminishes quality of life. A proposed treatment to slow disease progression is administration of nitisinone, a drug proven effective in reducing the level of HGA.[3] Unfortunately, it causes many side effects, such as corneal irritation, thrombocytopenia, leukopenia and porphyria. Consequently, neither a cure nor an effective therapy is available yet. The treatment of our patient focuses on symptom control; reducing joint complaints with physiotherapy, replacement surgery and painkillers.[2,3] Currently, he is under evaluation for aortic stenosis.

CONCLUSION

Alkaptonuria is a rare metabolic disease, characterised by HGA deposition in connective tissues and cardiac valves. It is important to diagnose this disease early to prevent serious complications and to avoid unnecessary therapeutic interventions.

REFERENCES

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