

# Yellow Nail Syndrome in a Medical Clinic

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## ABSTRACT

*Yellow nail syndrome is a very rare clinical entity usually diagnosed from a combination of yellow dystrophic nails, lymphoedema and respiratory diseases. The aetiology is not known though dysfunctional hypoplastic lymphatics is speculated. Most cases occur sporadically but few cases may be associated with systemic diseases or may be inherited.*

*This report documents another case in a 56-year old Caribbean female who presented with a six-year history of recurrent respiratory symptoms and later yellow dystrophic nails and lymphoedema. She responded well to vitamin E and oral fluconazole.*

*We also did a short literature review of yellow nail syndrome.*

**Keywords:** Pleural effusion, lymphoedema, yellow nails

## El Síndrome de las uñas Amarillas en una Clínica Médica

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## RESUMEN

*El síndrome de las uñas amarillas es una entidad clínica muy rara, la cual usualmente se diagnostica a partir de una combinación de uñas amarillas distróficas, linfedemas, y enfermedades respiratorias. Se desconoce la etiología, aunque se especula que se debe a vasos linfáticos hipoplásticos disfuncionales. La mayoría de los casos ocurre esporádicamente pero pocos casos pueden asociarse con las enfermedades sistémicas o pueden ser heredados. Este informe documenta el caso de una mujer caribeña de 56 años, que se presentó con antecedentes de síntomas respiratorios recurrentes y más tarde con uñas amarillas distróficas y linfedemas. Durante el tratamiento, respondió bien a la vitamina E y al fluconazol oral. El trabajo también realiza una breve revisión de la literatura del síndrome de las uñas amarillas.*

**Palabras claves:** Efusión pleural, linfedema, uñas amarillas

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## INTRODUCTION

Yellow nail syndrome (YNS) was initially described by Samman and White in 1964 (1) in patients with a combination of slow growing dystrophic yellow nails and lymphoedema but the association with chronic pleural effusion was later described by Emerson (2).

The diagnosis is mainly clinical with the inclusion of any two: yellow dystrophic nails, lymphoedema or chronic pleural effusion (3) though radio-imaging or lymphatic study

with a lymphangiogram may demonstrate hypoplastic lymphatics (1, 4).

Yellow nail syndrome is considered rare with very few cases reported in the literature, however, we describe an additional case in a 56-year old female from the West Indies seen at our medical clinic in George Town Hospital, Cayman Islands.

## Case report

A 56-year old West Indian female was seen in March 2009 due to a recurrent chronic cough which was productive of yellow purulent sputum with occasional bloody streaks and recurrent rhinosinusitis that had lasted more than six-years. She had no fever, malaise or significant weight loss. There

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was no history of contact with persons with pulmonary tuberculosis and she had no history of cigarette smoking.

She developed progressive swelling of both lower limbs which did not resolve with diuretics prescribed on numerous occasions. She had no underlying cardiac, renal or hepatic diseases. She also noticed yellowness of all her nails in the last one-year. Her other medical conditions were diabetes mellitus, hypertension and dyslipidaemia. She had no family history of similar complaints.

On examination, her vitals signs showed: blood pressure of 122/95 mm/Hg, pulse 93 beats/minute, respiratory rate 20 beats/minute and temperature 36.5°C. She had yellowness and dystrophic changes in all nails (Fig. 1) and



Fig. 1: Showing dystrophic yellow nails.

bilateral non-pitting pedal oedema (Fig. 2). There was no lymphadenopathy. Her lung examination showed bilateral



Fig. 2: Showing ankle oedema.

lower zone crepitations and localized wheeze. Her other systemic examination was unremarkable. Her laboratory findings showed haemoglobin [Hb] 12.5 g/dL, haematocrit [Hct] 38.7%, white cell count  $7.98 \times 10^3/\text{mm}^3$ , platelets  $240 \times 10^3/\text{mm}^3$ , serum electrolytes: sodium [Na] 141 mmol/L, potassium [K] 4.2 mmol/L, chloride [Cl] 107 mmol/L, carbon dioxide [CO<sub>2</sub>] 24 mmol/L, blood urea nitrogen [BUN] 5 mg/dL, creatinine [Cr] 0.8 mg/dL, blood glucose 133 mg/dL, alkaline phosphatase [AP] 148 u/L, aspartate transaminase [AST] 24u/L, alanine transaminase [ALT] 23 u/L, total protein 7.1 g/L, albumin 3.5 g/L and total IgG 1330 mg/dL [700–1,600], IgM, IgA as well as IgG subclasses were not available.

Her c-ANCA, p-ANCA, hepatitis B, C and HIV serology were negative as well as cystic fibrosis transmembrane conductance regulator [CFTR] gene mutation for cystic fibrosis.

The CT scan of the chest showed bronchopneumonic changes in the right lung as well as the lower zone of the left lung while a previous CT of the sinuses showed opacification of the maxillary, ethmoidal and sphenoidal sinuses with air-fluid levels. Lymphangiography for lymphatic circulation of lower extremities was not done. Her sputum cultures grew at various times *Pseudomonas aeruginosa*, *Burkholderia cepacia*, *Streptococcus pneumoniae*, *Achromobacter xylosoxidans*, *Alcaligenes faecalis*, and *Moraxella catarrhalis*. Her sputum was negative for mycobacterium and fungus repeatedly.

She received different courses of antibiotics for bronchopneumonia as well as Vitamin E 400 mg daily and diflucan 150 mg weekly.

A review at six-months showed that the nails were less dystrophic and yellowness was resolving.

## DISCUSSION

The patient presented with clinical features consistent with “Yellow nail syndrome” as described by previous authors (1, 2, 3, 5). She had yellow dystrophic nails, bilateral lymphoedema, chronic rhinosinusitis and recurrent bronchopneumonia.

In a review of 41 cases of “yellow nail syndrome” by Maldonado *et al* (5), the median age of presentation was 61 years, male to female ratio was the same, all had yellow nails, 97.5% had respiratory symptoms and lymphoedema occurred in 63% as the first presentation. The main respiratory diseases were pleural effusion in 46%, bronchiectasis in 44%, chronic sinusitis in 41% and recurrent pneumonia in 22% (5). The nail changes in YNS is best described as slow growing nails with yellowish discoloration, excessive curvature, onycholysis, nail ridging and thickening (1, 5).

The exact aetiopathogenesis of YNS is not known. There are few reported familiar cases (6, 7) but most cases occur sporadically and are either idiopathic or associated with specific systemic diseases such as xanthogranulo-

matous pyelonephritis (8), malignancy (9), rheumatoid arthritis (10), acquired immune deficiency syndrome (11) and tuberculosis (12).

The index patient did not have a family history of YNS but she is diabetic. The suggested underlying defect in YNS may be an anatomical or functional disorder of the lymphatic system resulting in compromised drainage of the lymphatics (4, 5). In the series of 12 patients by Bull *et al* (4), four had lymphangiography and all demonstrated lymphatic hypoplasia.

Failure of development of large lymphatics may cause stasis and dilation of smaller lymphatic capillaries resulting in fluid exudation.

The role of immunologic deficiency in YNS is not clear. There are case reports of functional and quantitative immunoglobulin deficiency. Bokszzanin and Levinson (13) reported a case with recurrent upper and lower respiratory tract infection with impaired IgG antibody response to polysaccharide antigens despite a normal total IgG, IgA, IgM, while other patients were reported with hypogammaglobulinemia (14, 15).

The total IgG was normal in the index case, however IgG subclass, IgM, IgA as well as antigenic response to antigens as pneumovax or H influenza B vaccine were not available.

Our patient grew *Streptococcus pneumoniae*, *Moraxella catarrhalis*, *Burkholderia cephalica* and repeatedly *Alcaligenes spp* mainly *Achromobacter xylosoxidans* and *Alcaligenes faecalis* in her sputum. *B cephalica*, *A xylosoxidans*, *A faecalis* are gram negative rods found in soil and water, however they are associated with recurrent lung infections in cystic fibrosis patients and are pathogenic in immunosuppressed patients.

The other findings documented in patients with YNS may include chylous ascites and intestinal lymphangiectasia (16, 17), chronic chemosis and peri-orbital oedema (18), and severe recurrent pericardial effusion (19).

There is no effective treatment for YNS though some cases may resolve spontaneously. In cases where there is an underlying treatable disease, patients were known to have recovered after satisfactory treatment of the associated systemic diseases (8, 9, 12).

The pleural effusion in YNS may be treated with repeated thoracentesis or pleurodesis while other respiratory symptoms may benefit from bronchodilators and antibiotics, diuretics or elastic stockings may help in lymphoedema but there is no definitive treatment for nail changes.

Oral vitamin E [alpha-tocopherol] was found beneficial in some cases of YNS (5, 20). In the case series presented by Maldonado *et al* (5), five out of eight patients improved significantly with vitamin E treatment but the role of oral azole antifungal is less convincing (21).

The index patient improved with resolution of nail yellowness and dystrophic changes with a combination of

oral vitamin E and fluconazole. The combination of pulse therapy with oral azole as fluconazole and vitamin E is very promising. There was complete resolution in 11 out of 13 patients treated with fluconazole and alpha-tocopherol and improvement in the remaining two (22).

Yellow nail syndrome may be a rare clinical syndrome, however the non-occurrence of the triad of nail changes, respiratory symptoms and lymphoedema concurrently in most cases calls for greater vigilance and follow-up when patients present with any of this symptoms.

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