

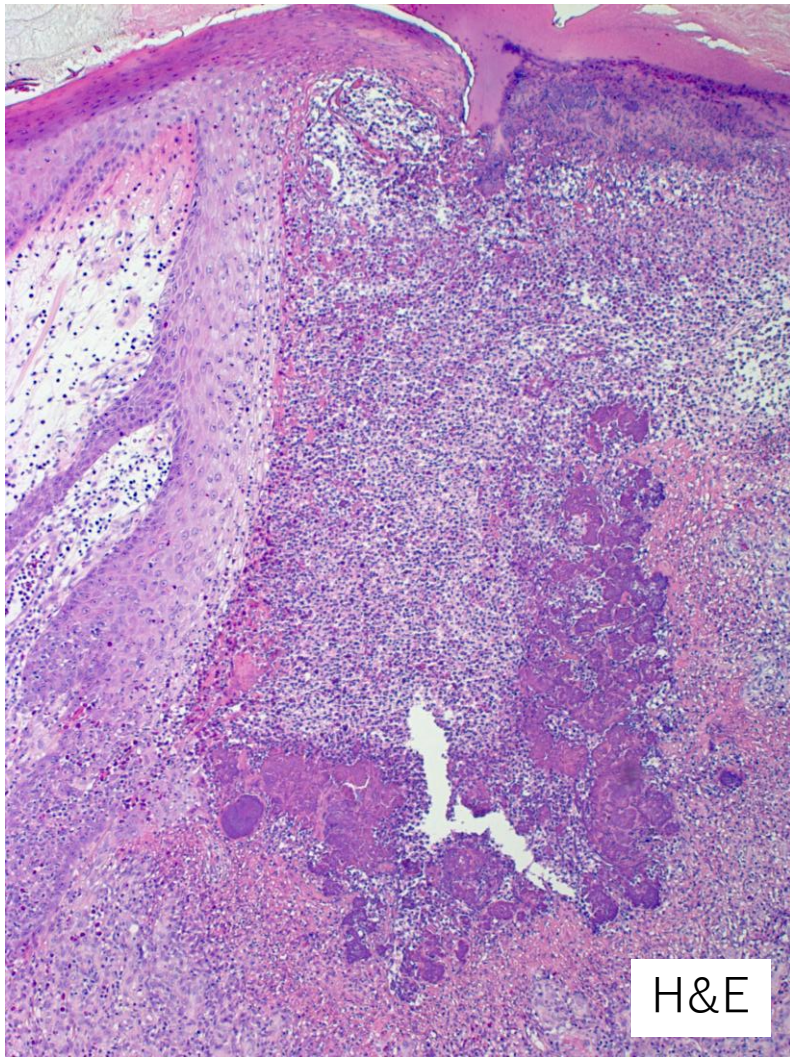
Cutaneous botryomycosis (*Staphylococcus aureus* infection) in Bruton type agammaglobulinemia

X-linked agammaglobulinemia (XLA) of Bruton type is a hereditary humoral immunodeficiency featured by the absence of B-lymphocytes and low or absent serum immunoglobulin levels. Clinical manifestations, commonly developing during the infancy, include recurrent bacterial infections primarily affecting the airways, bones, joints and skin. Pyogenic bacteria (*Streptococcus pyogenes* and *Streptococcus pneumoniae*) and *Haemophilus influenzae* type B represent the most frequently involved pathogens. Cutaneous botryomycosis caused by *Staphylococcus aureus* infection is also experienced. Here presented are brother cases of XLA complicating staphylococcal botryomycosis of the leg skin. MRSA was cultured, and colonies of Gram-positive cocci around the hair follicles are immunoreactive for staphylococcal antigens.

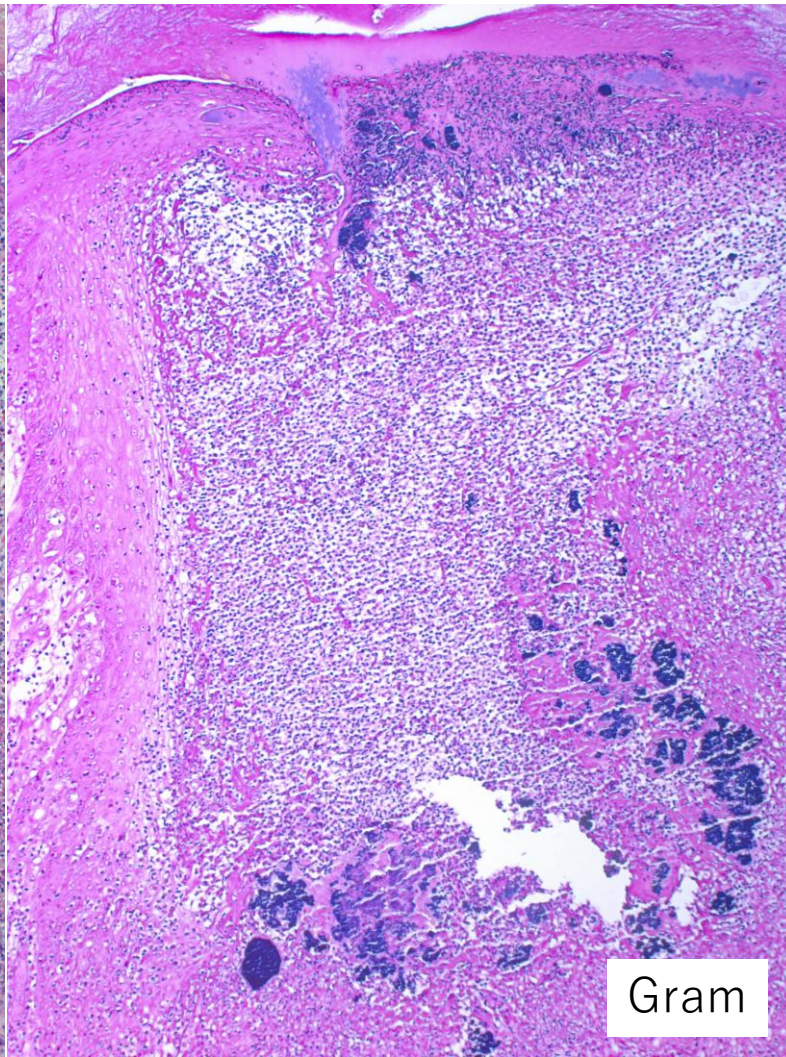
Ref.: Fidanzi C, et al. Vegetative skin lesions in patient with Bruton's agammaglobulinemia. Indian J Dermatol 2023; 68(4): 490. doi: 10.4103/ijd.ijd_910_22



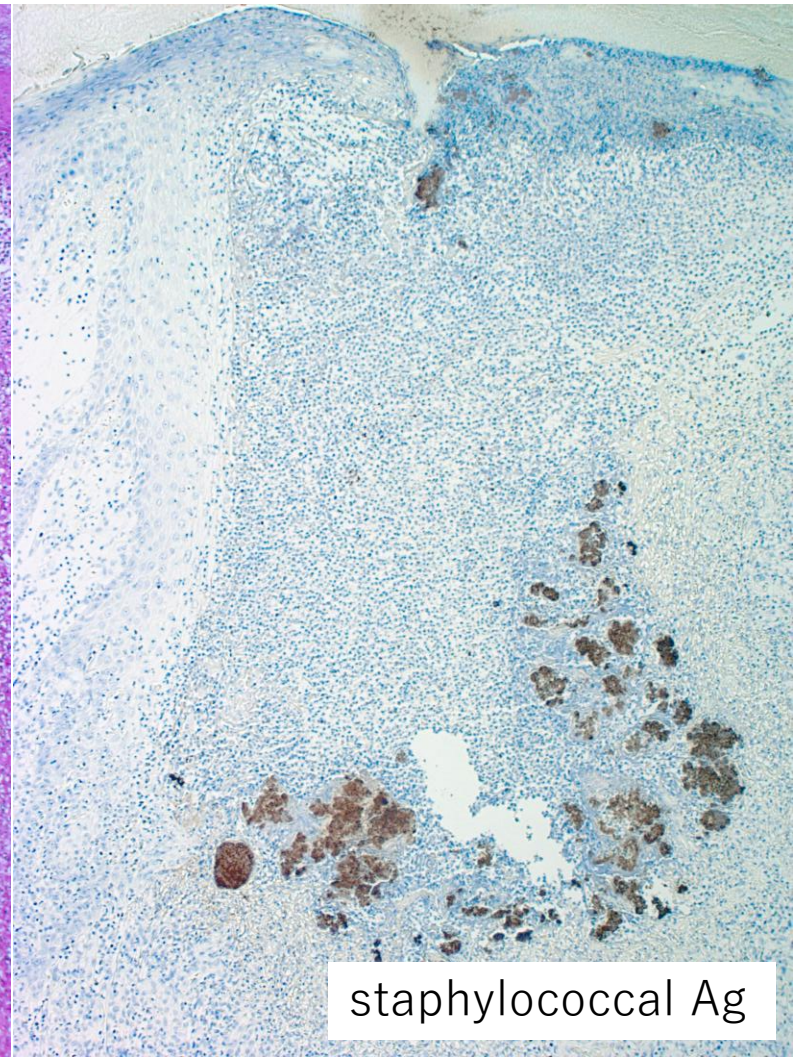
Cutaneous botryomycosis on the lower leg of a 21 y-o male patient with X-linked agammaglobulinemia of Bruton type. Serum immunoglobulin level is low. MRSA was cultured from the vegetative skin infection. The younger brother also reveal a similar skin lesion on the hip.



H&E

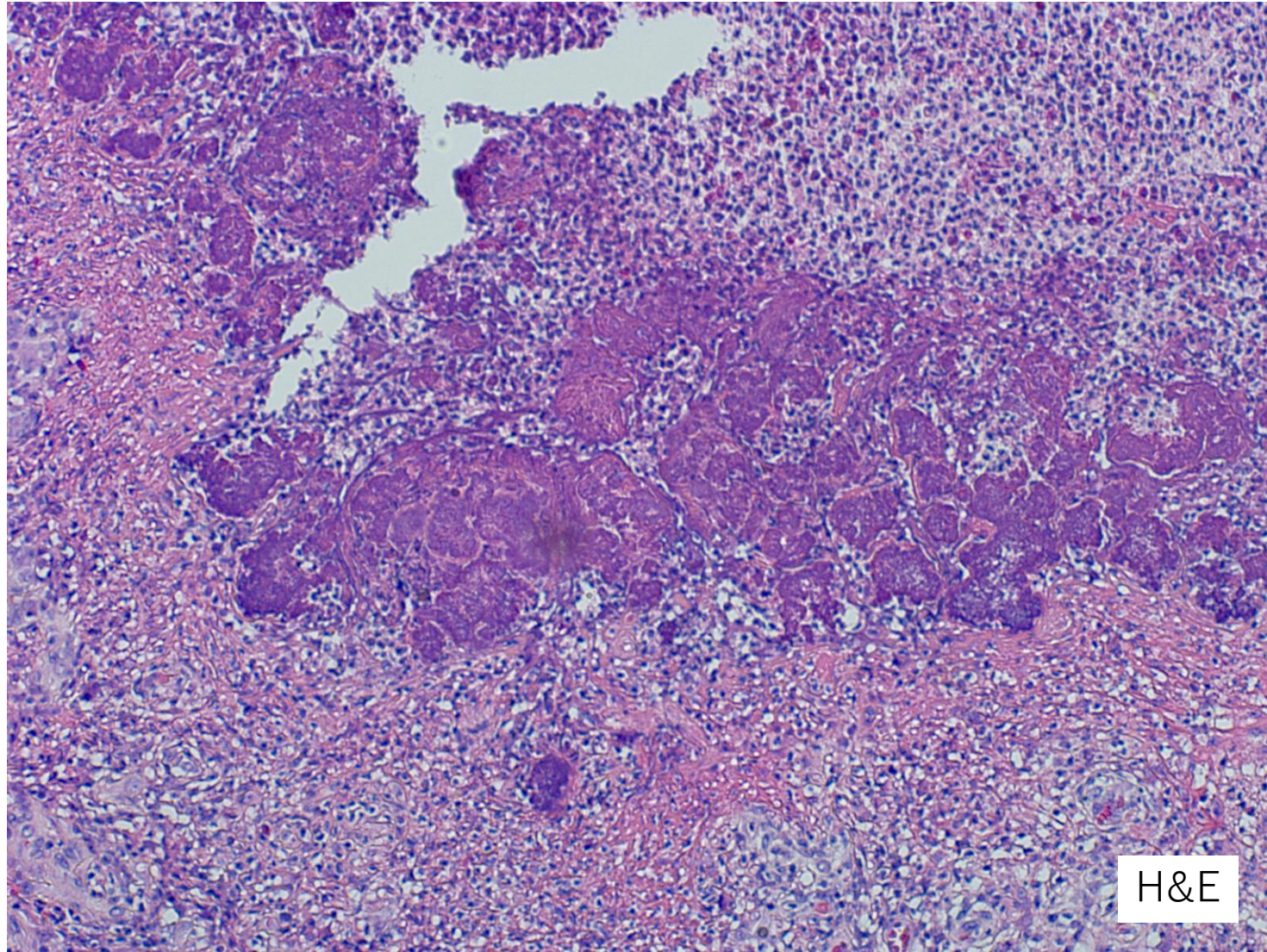


Gram

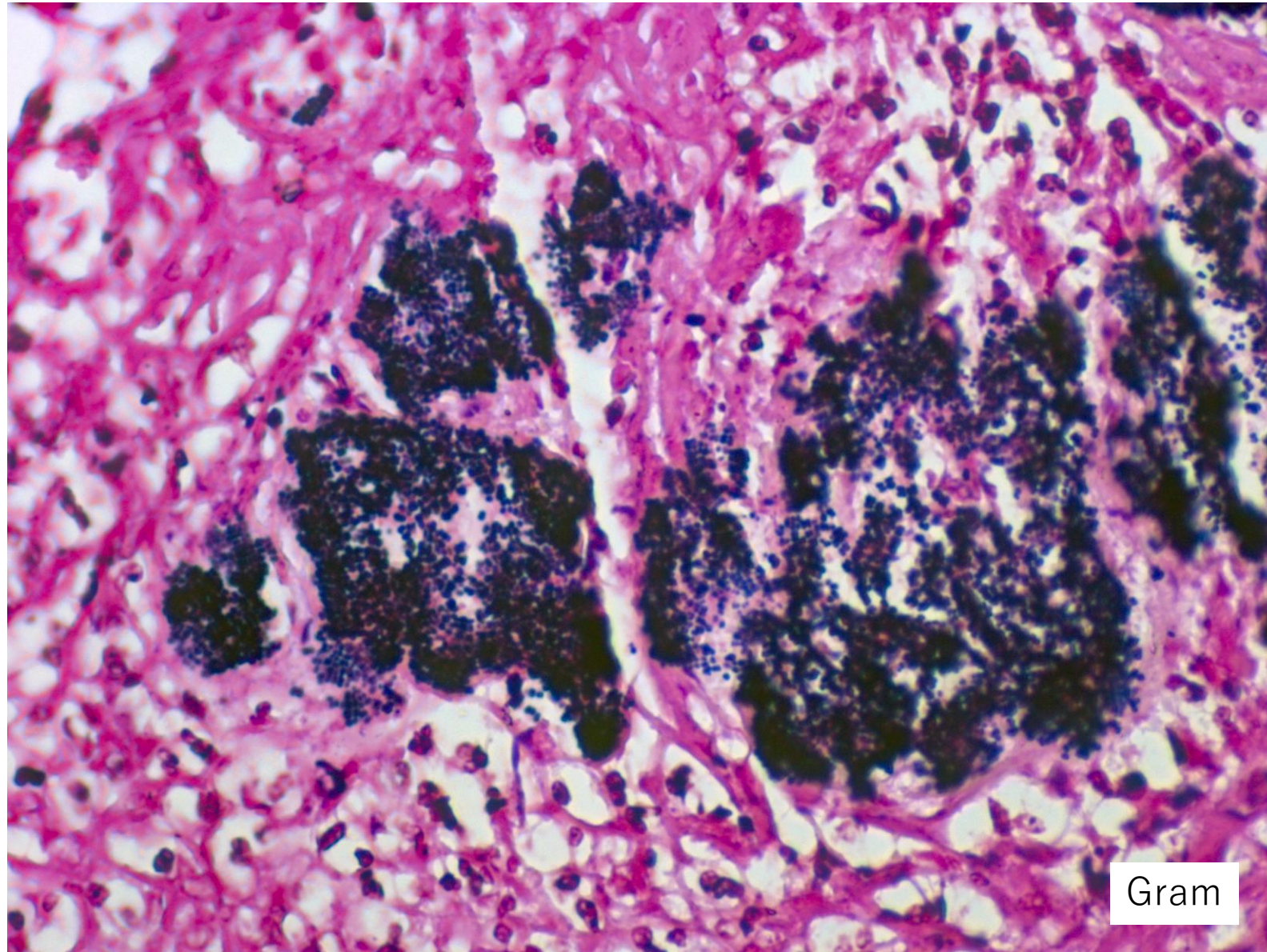


staphylococcal Ag

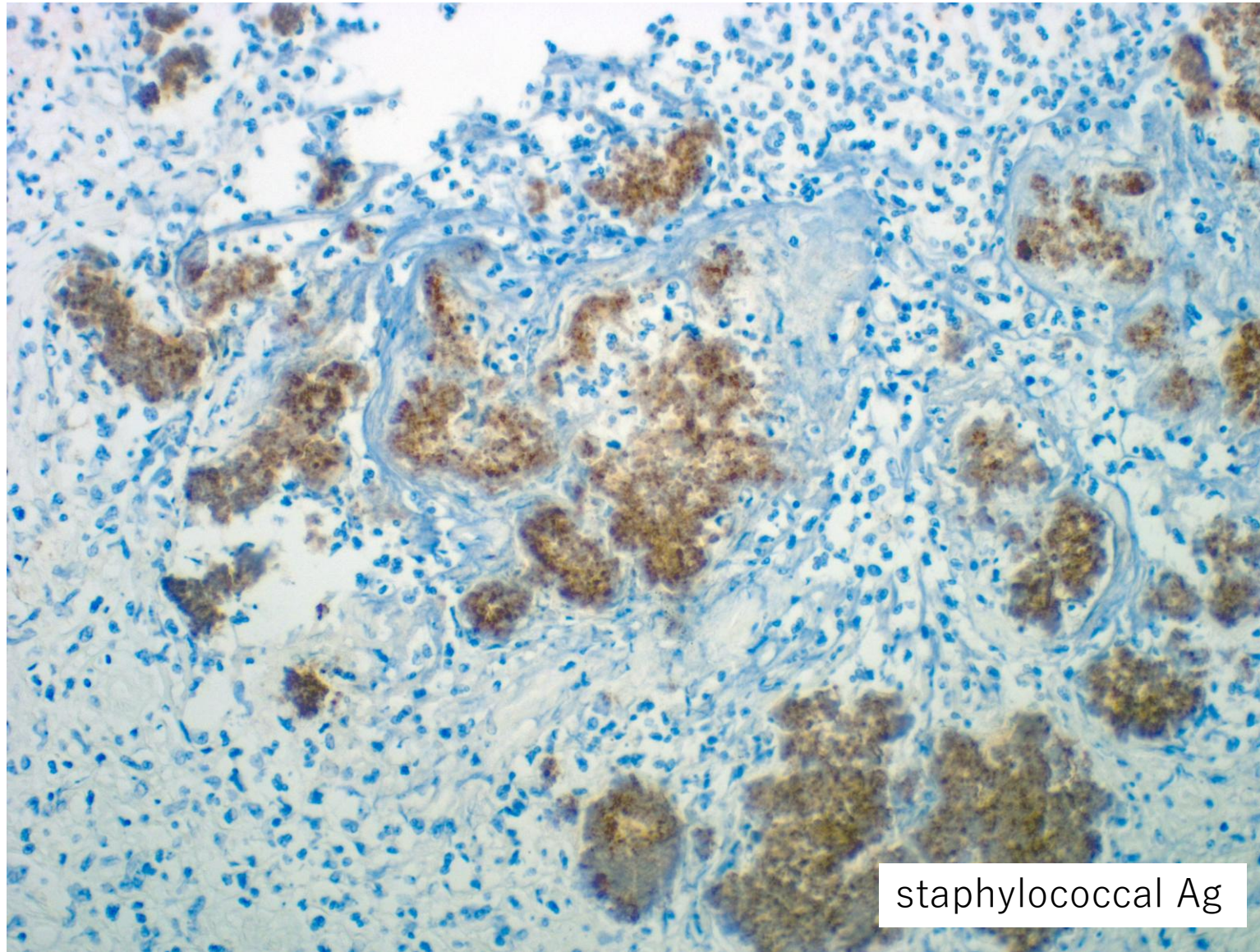
Cutaneous botryomycosis on the lower leg of a 21 y-o male patient with X-linked agammaglobulinemia of Bruton type. Serum immunoglobulin level is low. MRSA was cultured from the vegetative skin infection. Skin biopsy reveals infection of Gram-positive cocci with immunoreactivity of staphylococcal antigens. Botryomycosis is seen around the hair follicle (left: H&E, center: Gram, right: staphylococcal Ag).



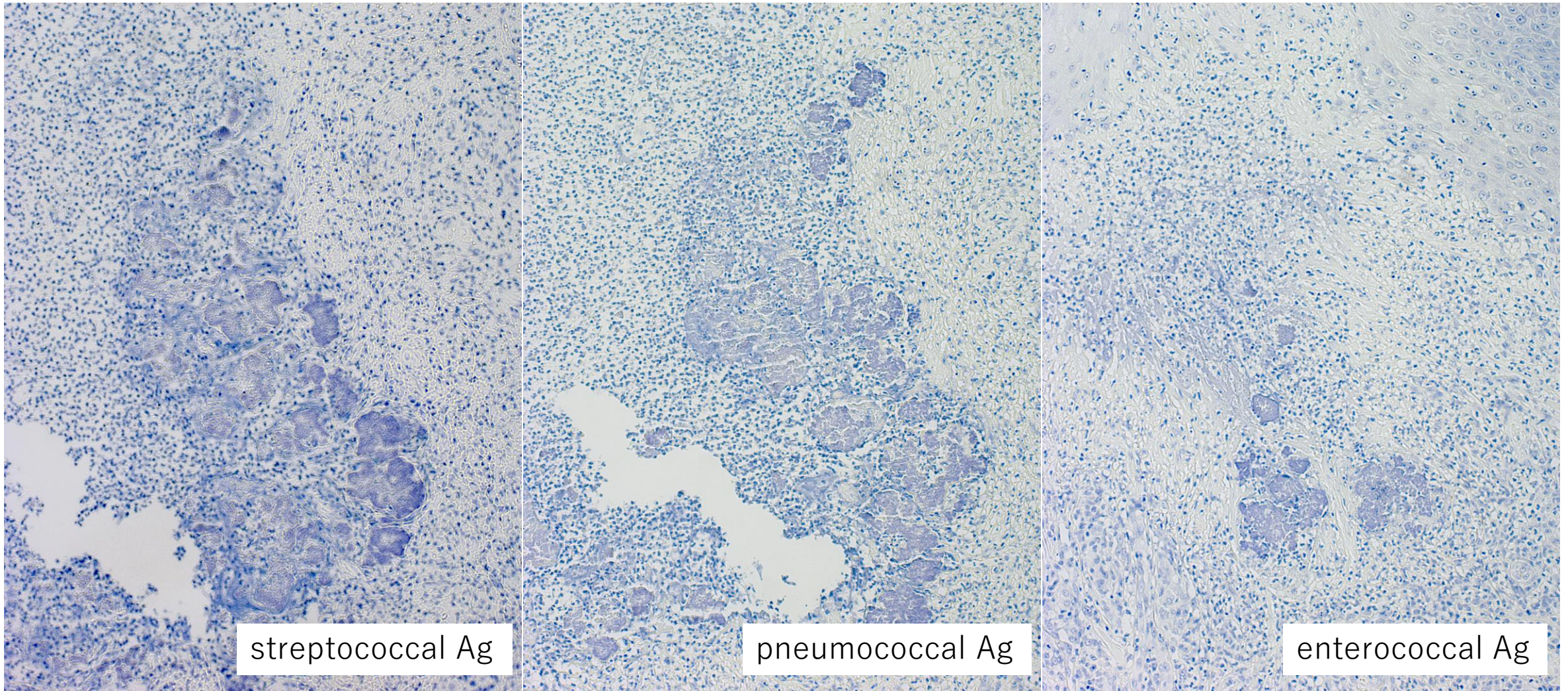
Cutaneous botryomycosis on the lower leg of a 21 y-o male patient with X-linked agammaglobulinemia of Bruton type. Serum immunoglobulin level is low. MRSA was cultured from the vegetative skin infection. Skin biopsy reveals colonization of cocci around the hair follicle (H&E).



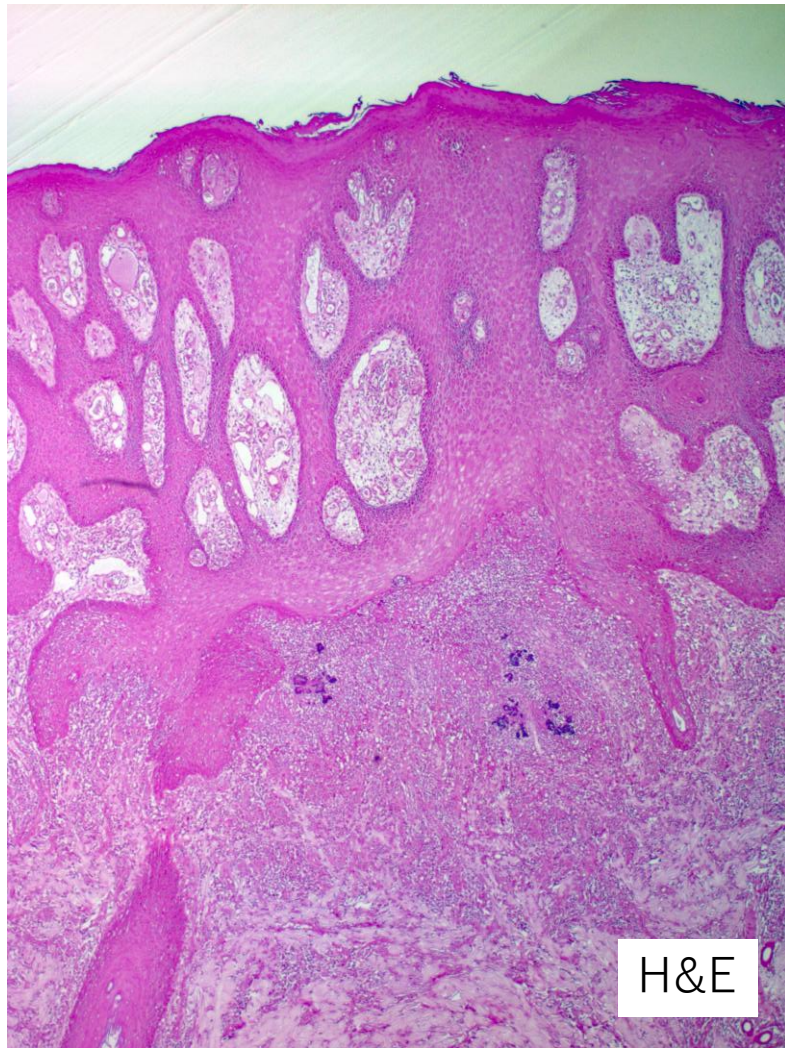
Cutaneous botryomycosis on the lower leg of a 21 y-o male patient with X-linked agammaglobulinemia of Bruton type. Serum immunoglobulin level is low. MRSA was cultured from the vegetative skin infection. Skin biopsy reveals colonization of Gram-positive cocci around the hair follicle (Gram).



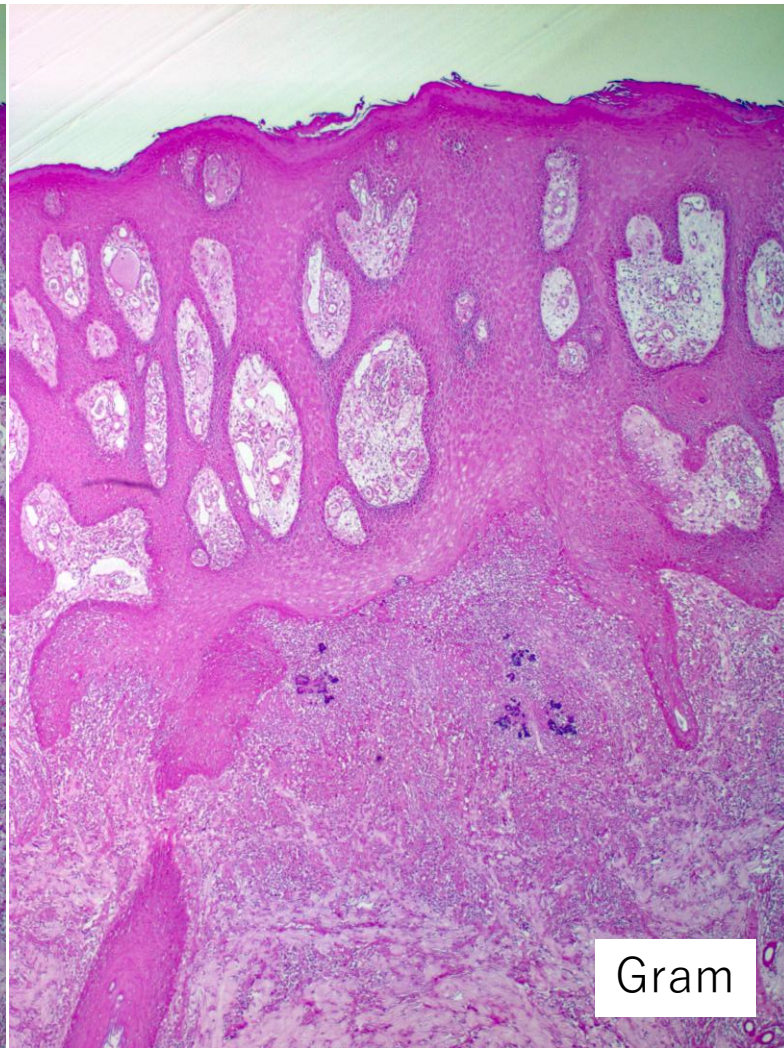
Cutaneous botryomycosis on the lower leg of a 21 y-o male patient with X-linked agammaglobulinemia of Bruton type. Serum immunoglobulin level is low. MRSA was cultured from the vegetative skin infection. The Gram-positive cocci are immunoreactive for staphylococcal Ag (immunostaining).



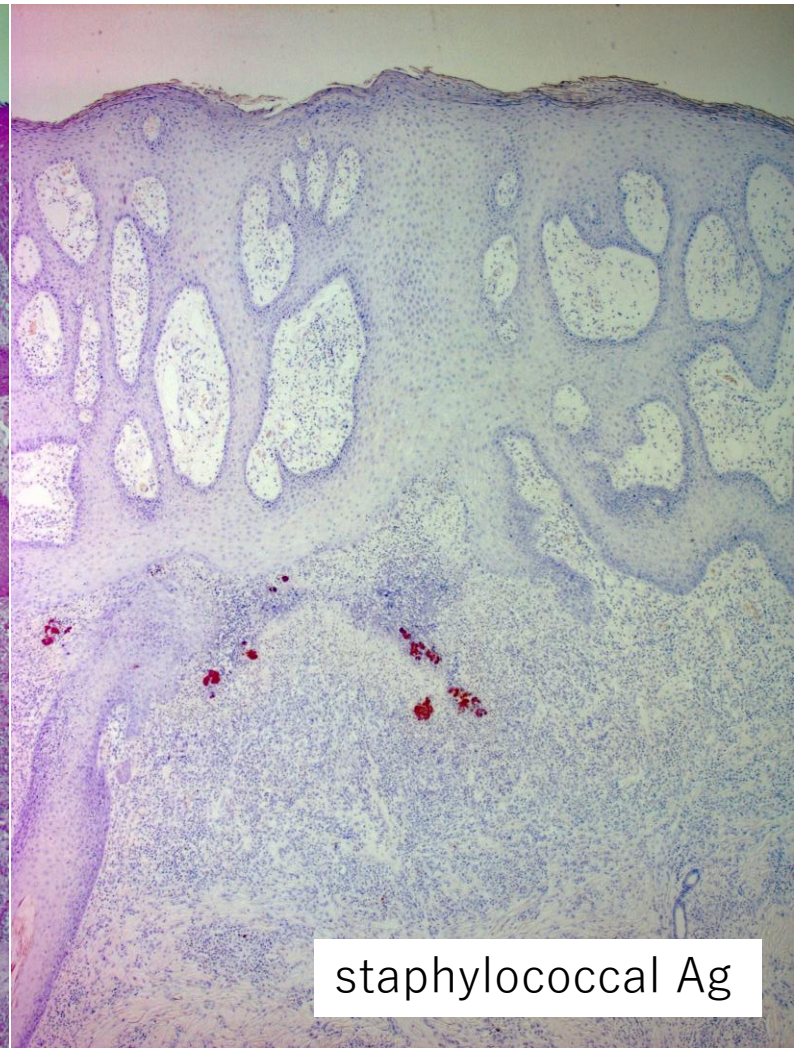
Cutaneous botryomycosis on the lower leg of a 21 y-o male patient with X-linked agammaglobulinemia of Bruton type. Serum immunoglobulin level is low. The colonies of Gram-positive cocci are negative for streptococcal (left), pneumococcal (center) and enterococcal (right) antigens (immunostaining).



H&E

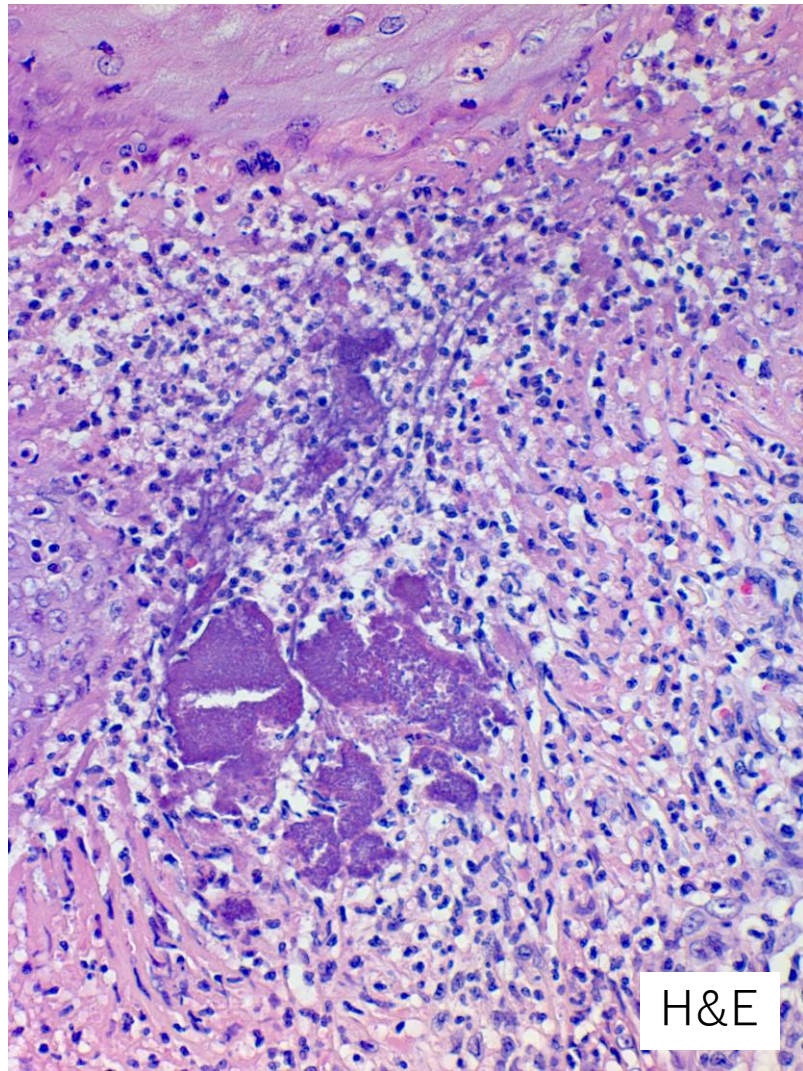


Gram

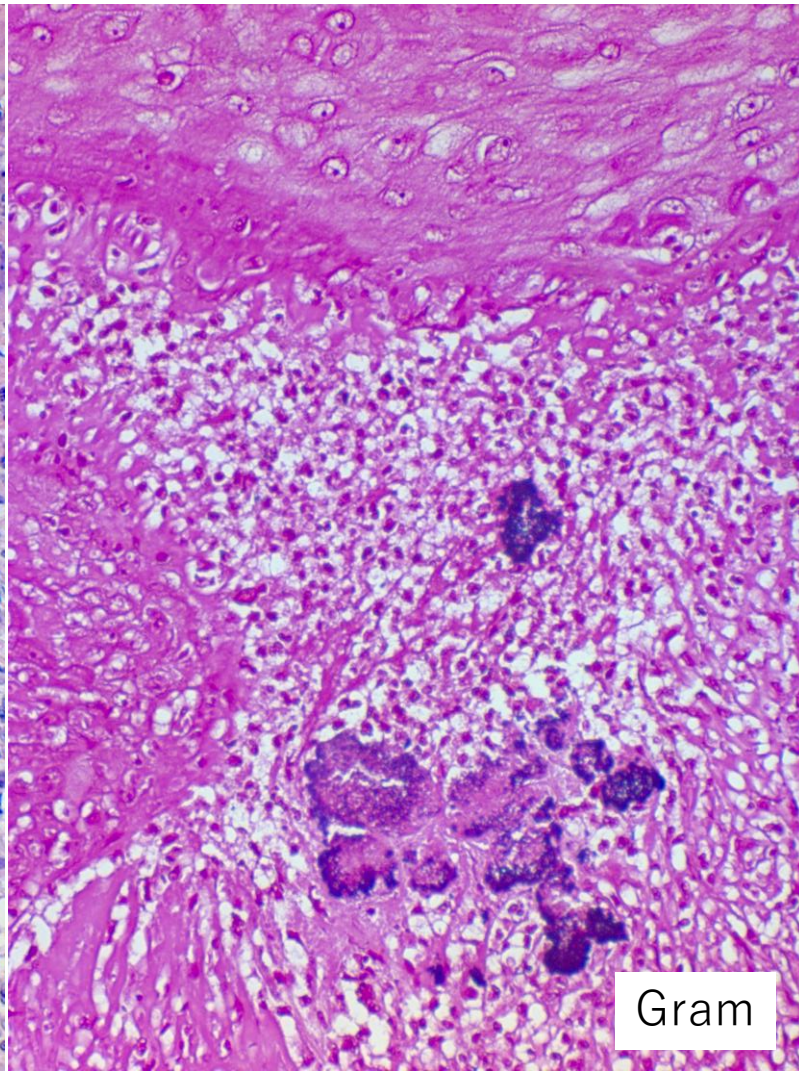


staphylococcal Ag

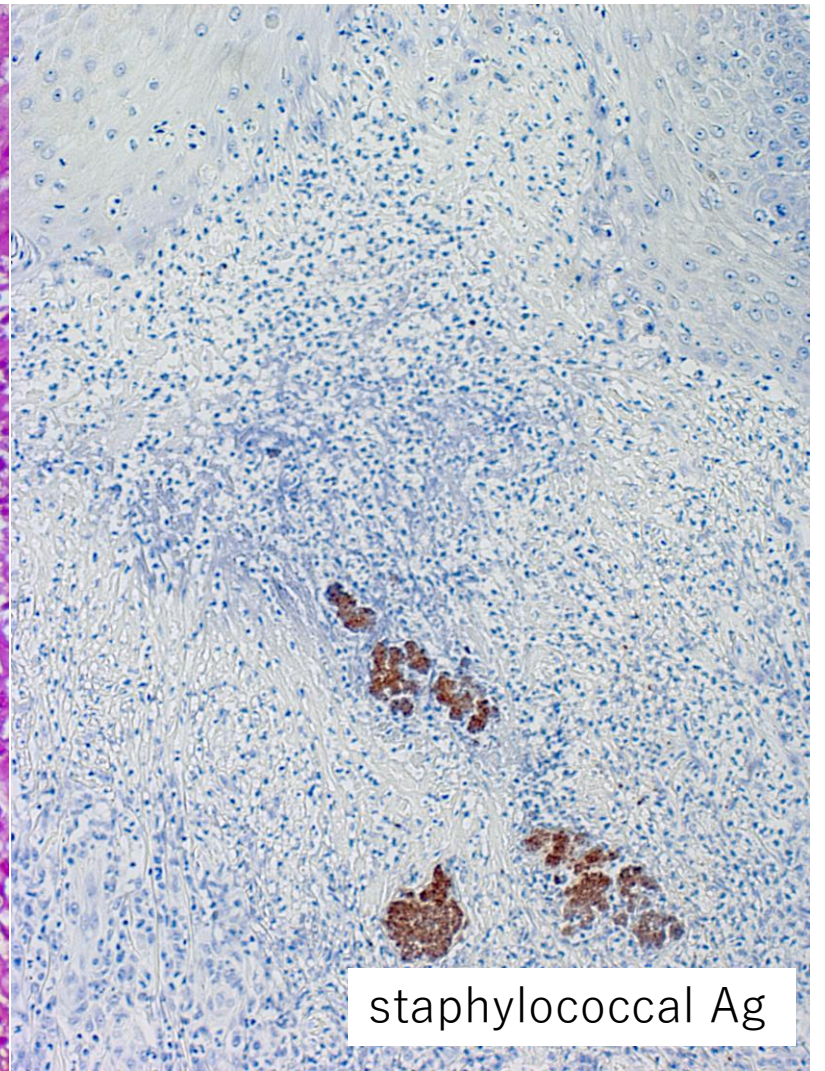
Cutaneous botryomycosis on the hip skin of a 20 y-o male patient (younger brother) with X-linked agammaglobulinemia of Bruton type. Serum immunoglobulin level is low. MRSA was cultured from the vegetative skin infection. Skin biopsy reveals infection of Gram-positive cocci with immunoreactivity of staphylococcal antigens. Botryomycosis is seen around the hair follicle (left: H&E, center: Gram, right: staphylococcal Ag).



H&E



Gram



staphylococcal Ag

Cutaneous botryomycosis on the hip skin of a 20 y-o male patient (younger brother) with X-linked agammaglobulinemia of Bruton type. Serum immunoglobulin level is low. MRSA was cultured from the vegetative skin infection. Skin biopsy reveals infection of Gram-positive cocci with immunoreactivity of staphylococcal antigens. Botryomycosis is seen around the hair follicle (left: H&E, center: Gram, right: staphylococcal Ag).