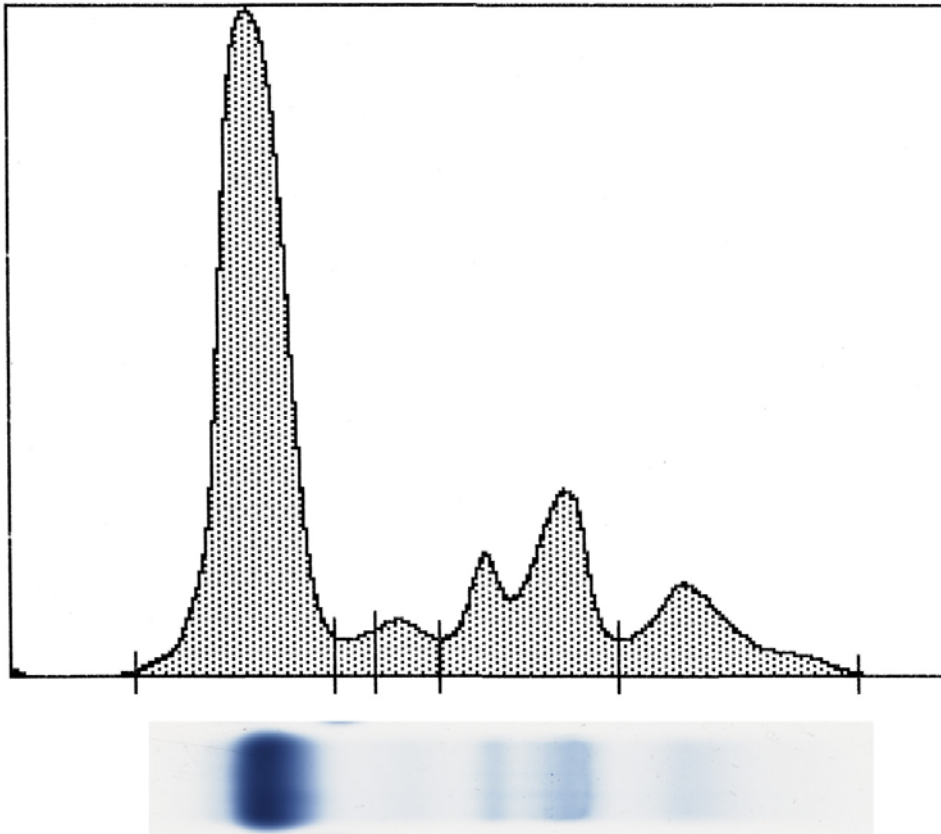


Clinical Case 6: Hemolysis and Lipemia and EPH.

Normal EPH

This is a normal EPH pattern from an African Grey Parrot. African Grey Parrots often have low or no visible prealbumin fraction. Albumin, in a normal animal, is the predominant fraction as shown here. Albumin can decrease with acute inflammation. Alpha 1 globulins are not commonly found in significant levels in psittacines (but are a major fraction in other avian species). A small alpha 2 fraction is demonstrated below. This fraction can increase non specifically with acute inflammation. In African Greys as well as a few other parrot species, beta globulins are present as a double peak. The gamma globulins shown below conform to the normal polyclonal resting pattern.

In EPH interpretation, the clinical pathologist examines both this densitometer tracing as well as the gel itself (shown underneath the tracing below). The two give a combined impression with the quantitated fractions to lead the pathologist to give the submitting veterinarian the most accurate interpretation possible.



From left to right: albumin, alpha 1, alpha 2, beta, and gamma globulins. The prealbumin fraction is absent in this bird. The A/G ratio is 1.59.

Hemolysis and Lipemia

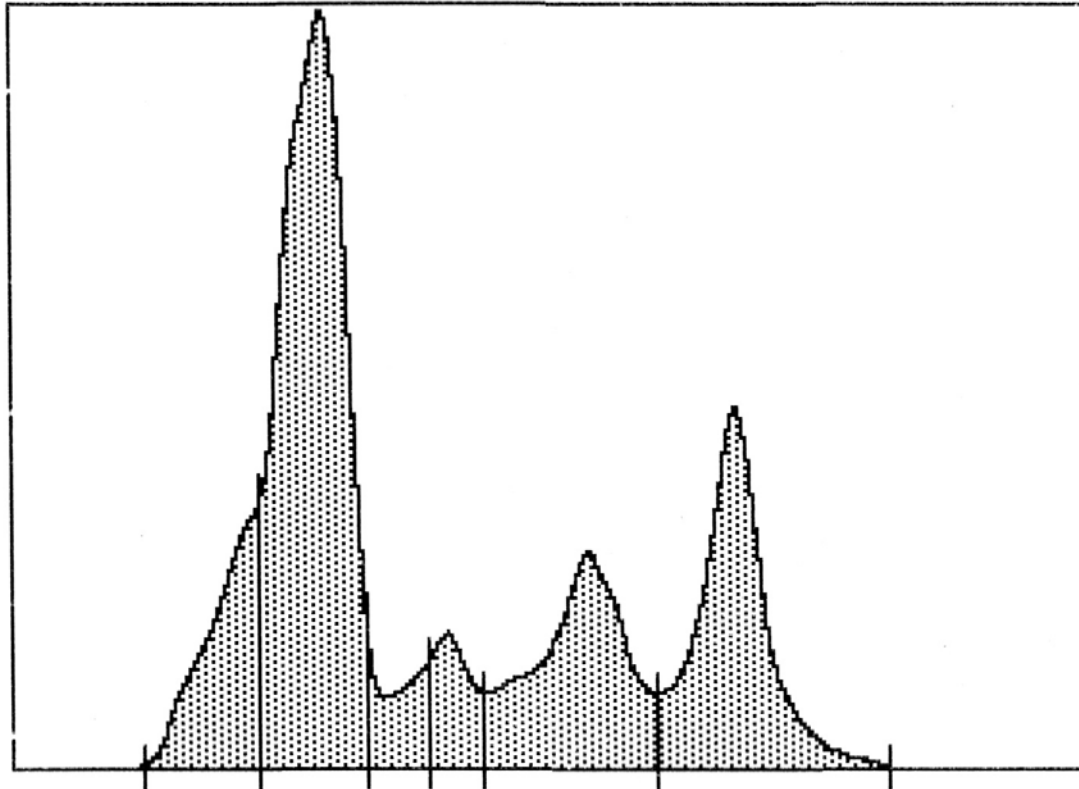
Hemolysis and lipemia can affect EPH results so it is important to minimize both in sample preparation and submission as well as recognize what effects may be present when running these samples. This laboratory assesses both changes and scores them on a 1-4 scale. Those samples with mild changes will be run for EPH while those with more moderate to marked changes will not be assayed unless requested.

In both cases, it should be recognized that hemolysis and lipemia will alter total protein levels as these are quantitated by refractometry in this lab. It is important in these cases, more than any other, to view the fractions by percentile rather than g/dL which will be falsely elevated due to the total protein change.

Hemolysis can artifactually increase the gamma globulin fraction. This is seen in the EPH below. A band that has a monoclonal appearance is present. As the change is mild, the pathologist can give a proper final EPH interpretation knowing to discount any artifact. As always, proper sample handling can aid in lessening or preventing sample hemolysis. GTT should be spun and plasma separated to an inert tube before shipping.

Artifact in the gamma fraction due to 2+ hemolysis.

A/G ratio = 1.19, Gamma globulins = 20.5% (normals 10-15%)



Lipemia can alter the migration of the beta fraction so that it partially migrates in the alpha 2 range as well as sometimes causing an artifactual mark at the point of sample acquisition. Again, recognition of these changes by the pathologist will result in a fair interpretation of your patient sample.

Artifact in the alpha 2-beta fraction due to 2+ lipemia.

A/G ratio = 1.25. Percent beta = 7% (normals 12-21).

