Orlando: The lumpy, bumpy goose

[Atypical, multiple, papillamotous xanthomatosis in a goose (*Anser anser*)]

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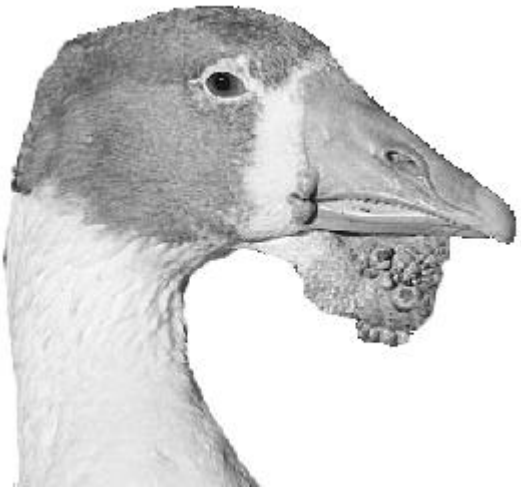
Initial presentation



Orlando was an 18 month-old, 7.6kg greylag goose that presented to the clinic with a 2 month history of slowly growing multifocal, papillomatous skin masses. These were limited to the non-feathered skin and were predominantly located at mucocutaneous junctions. At presentation, a large mass was present in the submandibular space, with smaller masses located at the commisures of the beak, periocular skin and on both the plantar and dorsal surface of the feet-webs. Smaller masses ranged from 0.5 to 1.5 cm with the large submandibular mass measuring approximately 4 cm diameter at its widest point. Some masses were ulcerated and had crusty exudation on the surface.

Initial evaluation of these masses was undertaken by excision of the submandibular mass and numerous foot-web masses. These were processed for histopathological examination and immunohistochemistry. Cut surfaces of the masses were pale yellow, lobulated and oozed an oily material.

Histopathology

The tissues from each site were histologically similar. The tissues were composed of well-vascularised, loosely encapsulated cellular nodules surrounded by thin fibrous septae. The nodules were composed of vacuolated cells. Material in the vacuoles stained red with oil-red O. Some of the larger nodules contained a central core of necrosis that contained foamy lipid and occasional acicular clefts. Occasional inflammatory foci were present, predominantly near ulcerated surfaces. Acid fast, Giemsa and silver stained sections did not demonstrate any organisms associated with the nodules.

Major differentials at this stage
:

Lipoblastomatosis
Atypical xanthoma
Atypical multiple lipoma

Immunohistochmistry

Sections were sent to Cornell University and underwent immunohistochemical staining for vimentin (mesenchymal cells), S100 (adipocytes) and lysozyme (macrophages). All stains were negative.

Does this reflect a problem with avian epitope binding? No differentials could be ruled out.

Second presentation

Orlando returned to the clinic 4½ months later for evaluation of acute lameness. This was found to be cellulitis and non-septic arthritis which responded to NSAID and antibiotic therapy.

At this time, there was regrowth of two nodules in the submandibular space and progressive growth of all the other masses. The owner was given the option of chemotherapy or staged excisional surgeries, and elected chemotherapy.

Chemotherapy

Masses on the left foot only were treated, with the right foot left untreated to act as a control. Carboplatin was selected as platinum containing agents have been reported to be effective against mesenchymal masses in birds, and carboplatin is reported to have a lower incidence of side effects than the other major platinum containing agent, cisplatin. For each treatment, 20 mg of carboplatin was suspended in 2 ml sesame oil and this combination was injected into each mass in two planes. This treatement was repeated after 7 days. Biochemical panels were performed immediately prior to and 24 hours after each treatment.

Treatment results

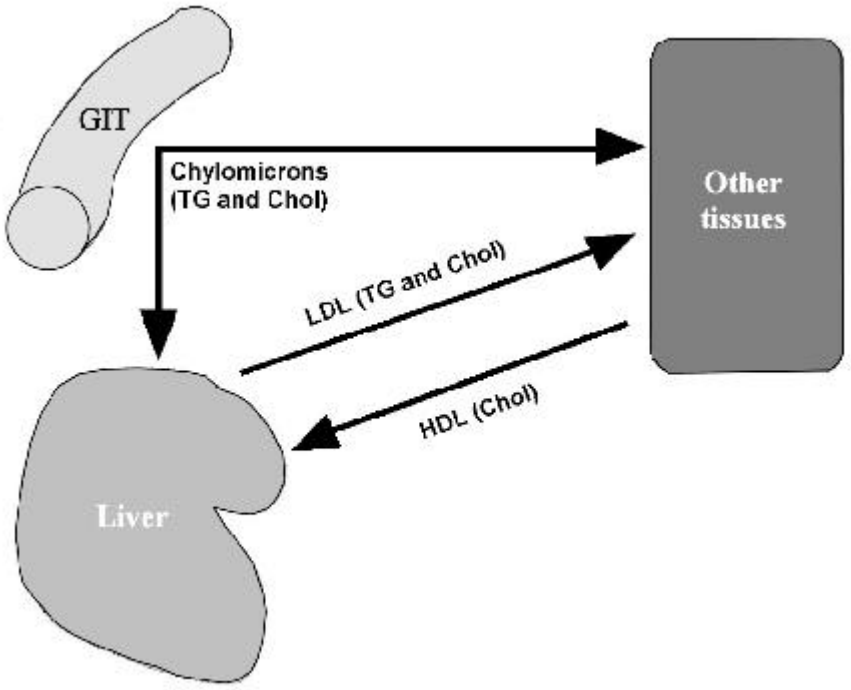
A technical success! No significant biochemical alterations. No evidence of nausea, vomiting or renal disease. However … no significant changes in size or palpable texture of the masses. Histological evaluation of masses excised one week after second treatment demonstrated no differences in histological appearance between the treated and untreated foot.

Further evaluation

Lipid panels were performed on the blood samples collected immediately prior to the two chemotherapy treatments. Results are shown below:

	Normal Range	**Week 18**	**Week 19**
Chilomicron layer	Absent	Absent	Absent
Cholesterol (mmol/L)	3.2-6.2	**8.4**	7.0
Triglyceride (mmol/L)	1.7-2.9	**29.4**	**13.3**
HDL (mmol/L)	?	1.1	1.4
LDL (mmol/L)	?	0.4	2.7

These results demonstrate a significant persistent hypertriglyceridaemia and mild persistent hypercholesterolaemia. No evidence of increased transport proteins (compared to mammalian normal ranges), but normal avian lipoproteins are unreported. But what do these lipoproteins do?



Lipaemia differentials

Hypercholesterolemia	Hypertriglyceridaemia
• hypothyroidism	• egg-related peritonitis
• liver disease	• starvation
• cholestasis	• diabetes mellitus
• starvation	• cholestasis
• xanthomatosis	• familial
• high fat diets	• idiopathic
• dibetes mellitus	
• hyperadrenocortisism	

In this case, the majority of causes of hypertriglyceridaemia were eliminated by the history and the repeatedly normal biochemical panels. This leaves idiopathic or familial in this case. Pesistent hypertriglyceridaemia has been reported to result in xanthoma formation in cats, however it is unclear in this case whether the xanthomas in this case were the cause or effect of the hypertriglyceridaemia.

References

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