Investigating Mesenteric Lymph Nodes and Fat for Microbes Associated with Crohn's Disease

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Crohn's disease (CD) is characterized by an inflammation affecting commonly the small intestine. In many cases, these patients require intestinal resection surgery due to obstruction of the intestine. CD is a multifactorial disease believed to be cause by a dysregulated immune system where genetics, the environment and microorganisms play a crucial role. Over the years, many bacteria have been proposed as a causal factor including: *Escherichia coli*, *Salmonella spp*, *Campylobacter spp* and *Mycobacterium avium* subsp. *paratuberculosis* (MAP). *Escherichia coli*, *Salmonella spp.* and *Campylobacter spp.* are present in dairy cattle and have been responsible for foodborne illness cases all over the world. Evidence in the scientific literature demonstrates an association between CD in humans and MAP and *E. coli*, although this link remains to be proven causal. Both MAP and *E. coli* have been found in bovine faeces, milk samples, farm environment, surface water and in CD patients.

However, inflammation of the mesenteric lymph nodes is likely to occur before the development of any lesions in the intestines, making it the ideal place to look for these bacterium in newly diagnosed patients. Therefore, our aim is to explore the presence of MAP and other bacteria in the mesenteric lymph nodes and assess its potential role as a cause for CD. Mesenteric lymph nodes, mesenteric fat and resected tissue samples will be collected, starting in the spring of 2001, from CD patients referred for surgery for intestinal resection (cases) as well as from patients with other diseases necessitating similar surgeries (controls). Samples will be analyzed for standard bacterial culture and for the presence of MAP by culture and PCR techniques and blood will be collected from participants for patient genotyping. Finally, patient's characteristics will be recorded in order to address differences between groups.

Implications: This study will be important in determining patient's characteristics that may play an important role in the etiology of this disease and determining the susceptibility of CD patients to these cattle originating bacteria.