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**Body:** Activation and migration of neutrophils into the lung is a central factor in both the onset and progression of acute lung injury (ALI). The assessment of neutrophil biology and trafficking in the lung is fraught with methodological pitfalls. Human ex vivo ALI models could provide a tractable platform with which to investigate neutrophil trafficking in the lung. Human lungs from brain dead donors (N=3) were cold preserved and transferred to our institution. Lungs were placed on an ex vivo lung perfusion circuit and following rewarming, E Coli lipopolysaccharide (LPS, 6mg) was injected intra-bronchially into the RML. The LLL was used as the control. CT images, tissue biopsies and BALF for cytopsin preparations were taken at T=0 and 4 hours after LPS injury. CT Images showed ground glass infiltrate in the RML at 4 hours with otherwise normal lung by CT criteria (Figure 1). Compared to control lung (Figure 2A), at 4 hours, LPS injured lung (Figure 2B) demonstrated a neutrophilic alveolitis while BAL cytopsin of LPS injured lung showed a predominance of neutrophils (Figure 2C). Further characterisation of this novel model allied with established methodology in pulmonary neutrophil trafficking will provide a powerful tool to investigate neutrophil biology in human ALI. Fig.1 CT image of LPS injured lung at 4 hours

Figure 2