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The Use of the Micronizer for Stromal Vascular Fraction Concentration

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Introduction: Adipose tissue is a great source of regenerative cells. Fat is composed of Stromal Vascular Cells which provide support to the parenchymal cell or lipocytes. Stromal cell are made up of a structure of fibroblasts, collagen and angiocytes containing the stem cells. Stromal cells provide tissue repair and renewal, collectively known as Stromal Vascular Fraction (SVF).

Methods: Mechanical separation is commonly done with devices that crush the fat cells with blunt pressure. A technique of concentrating the stromal vascular fraction of fat grafts using a micronizer housing a double edge ultra sharp blade is described. The micronizer is available in a 2.4 and a 1.2 diameter.

Results/Conclusions: Fat cells are sequentially lysed with the blade, releasing the oil which is removed by centrifugation or straining, resulting in increased SVF content. The adipose-derived stem cells (ASCs) are preserved. Without stromal cellular damage. The Micronizer is used to cut the fat particles to the desired sizes for injection. By passing the fat particles through the 2.4 mm micronizer. Particles are reduced to 1 mm and 0.5 mm when passed through the 1.2 mm micronizer. 1 mm fat particles are used for injection above the periosteum for malar chin and mandibular volume enhancement; 0.5mm for cheek. Circumoral and lip volume correction; 0.25mm for intradermal injection for skin rejuvenation. Particle size can be further reduced by selective straining creating nanofat for injection intradermally into the lower eyelid skin.

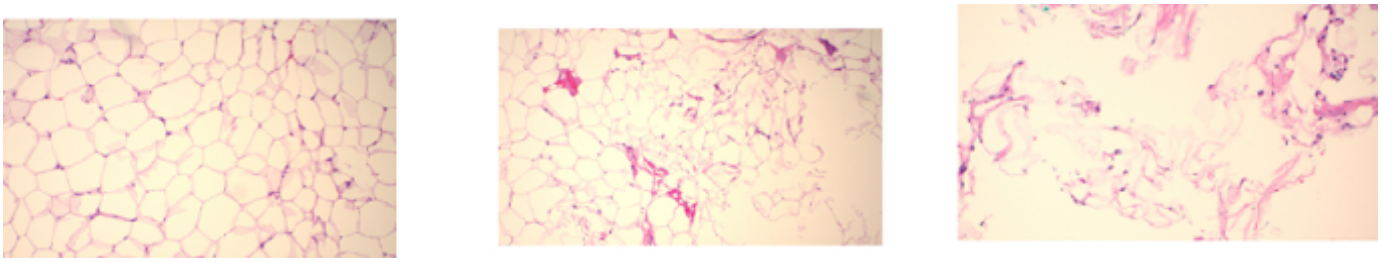
Fig. 1



Full size image

Micronizer containing a double sided sharp blade which reduces fat particle size

Fig. 2



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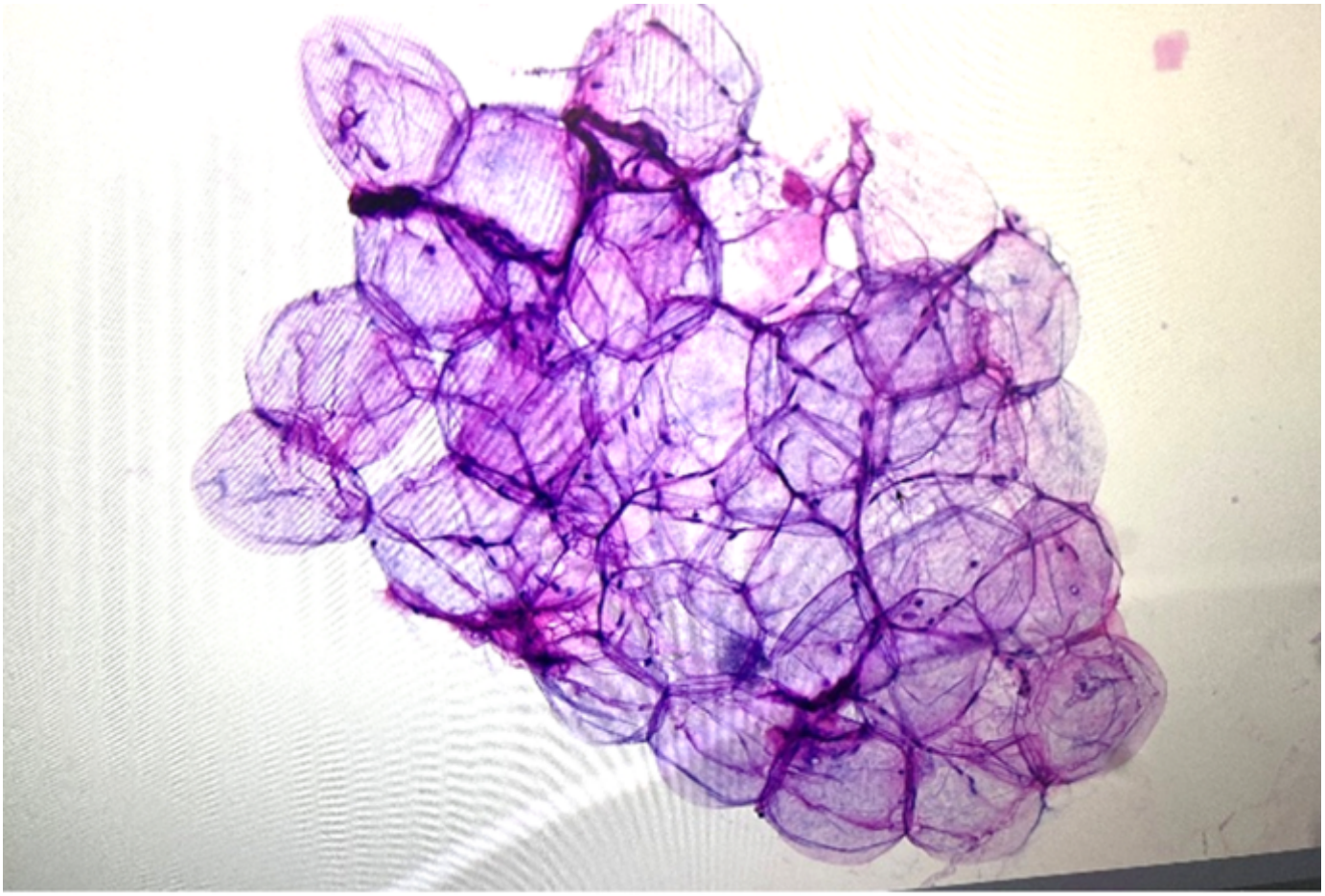
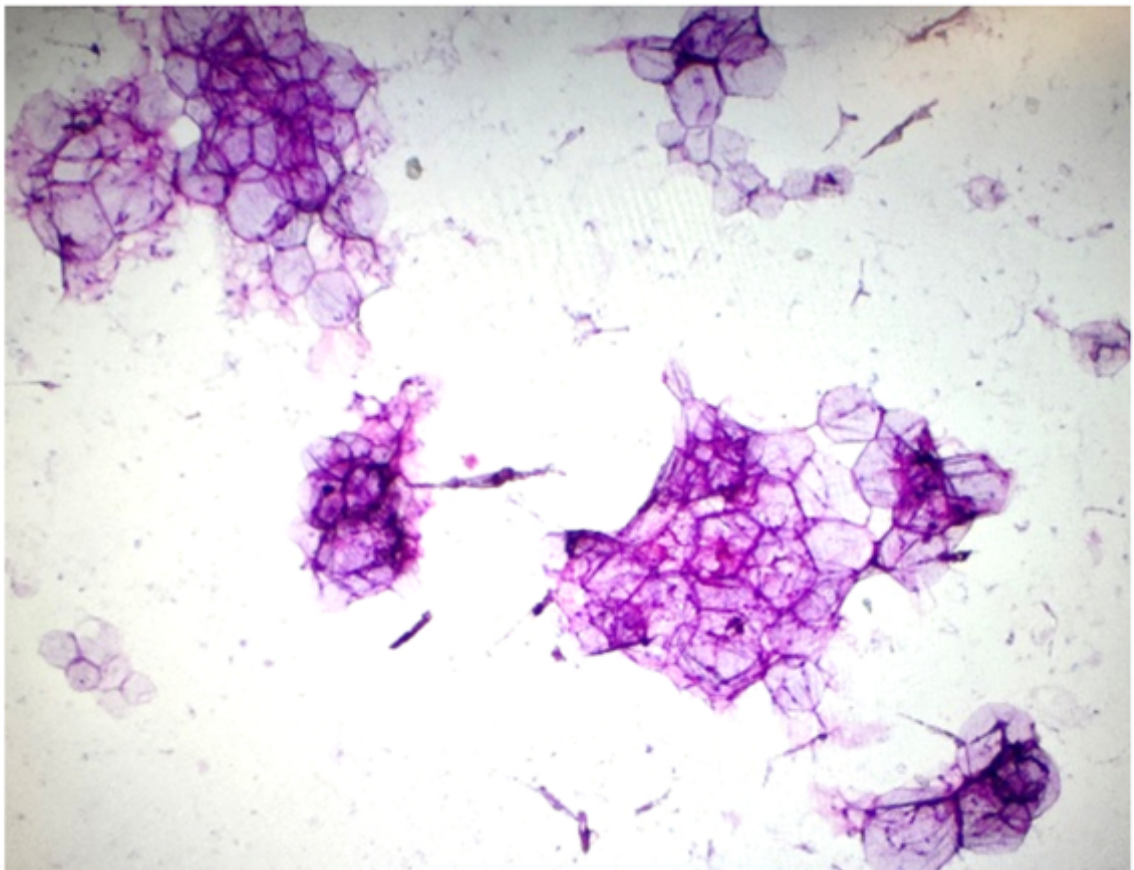
As fat is passed through the micronizer, the fat cells are lysed, releasing oil which is removed by centrifugation or straining. Stromal vascular cells are retained and concentrated

Fig. 3





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A Normal fat; **B** Stromal vascular concentrated fat