

**Supplemental Table S2**

A PERMANOVA **Group**

Permutation N: 9999  
 Total sum of squares: 17.93  
 F: 2.083  
 p (same): 0.0008

<b>Bonferroni corrected</b>	Stenosis control	Idiopathic	Iatrogenic	Mucosal control
Stenosis control		0.666	0.5376	0.0114
Idiopathic	0.666		0.1332	0.006
Iatrogenic	0.5376	0.1332		0.0102
Mucosal control	0.0114	0.006	0.0102	

B PERMANOVA **Tissue Type**

Permutation N: 9999  
 Total sum of squares: 17.93  
 Within-group sum of squares: 17.4  
 F: 1.778  
 p (same): 0.0346

<b>Bonferroni corrected</b>	Normal	Scar
Normal		0.0368
Scar	0.0368	

C PERMANOVA **Etiology**

Permutation N: 9999  
 Total sum of squares: 8.79E+06  
 Within-group sum of squares: 8.16E+06  
 F: 2.255  
 p (same): 0.0113

<b>Bonferroni corrected</b>	Idiopathic	Iatrogenic	None
Idiopathic		0.4644	0.0054
Iatrogenic	0.4644		0.0726
None	0.0054	0.0726	

D PERMANOVA **Sample Site**

Permutation N: 9999  
 Total sum of squares: 17.93  
 Within-group sum of squares: 16.51  
 F: 1.629  
 p (same): 0.0077

Bonferroni corrected	Supraglottis	Subglottis	Trachea	Glottis
Supraglottis		0.93	1	0.0426
Subglottis	0.93		0.1656	0.4392
Trachea	1	0.1656		0.3726
Glottis	0.0426	0.4392	0.3726	

E PERMANOVA **Sex**

Permutation N: 9999  
 Total sum of squares: 17.93  
 Within-group sum of squares: 17.38  
 F: 1.865  
 p (same): 0.0246

Bonferroni corrected	F	M
F		0.0273
M	0.0273	

F PERMANOVA **Smoking**

Permutation N: 9999  
 Total sum of squares: 17.93  
 Within-group sum of squares: 17.07  
 F: 1.457  
 p (same): 0.0545

Bonferroni corrected	Never	Former	Active
Never		0.2664	0.3456
Former	0.2664		0.4491
Active	0.3456	0.4491	

G PERMANOVA **Patient**

Permutation N: 9999  
 Total sum of squares: 17.93  
 Within-group sum of squares: 6.102  
 F: 1.938  
 p (same): 0.0001

