

Supplementary Table S1 Genes associated with clinicopathological features			
Genes	Histology		p-value
	Unfavorable (N:7)	Favorable (N:36)	
<i>MMP17</i>	3/7 (42.86%)	0/36 (0.00%)	0.003
<i>OR6C70</i>	3/7 (42.86%)	0/36 (0.00%)	0.003
<i>MPDZ</i>	4/7 (57.14%)	2/36 (5.56%)	0.004
<i>FLG2</i>	3/7 (42.86%)	1/36 (2.78%)	0.010
<i>KIF13A</i>	3/7 (42.86%)	1/36 (2.78%)	0.010
<i>KRT6B</i>	3/7 (42.86%)	1/36 (2.78%)	0.010
<i>MEGF8</i>	3/7 (42.86%)	1/36 (2.78%)	0.010
<i>RFC1</i>	3/7 (42.86%)	1/36 (2.78%)	0.010
<i>APOB</i>	4/7 (57.14%)	4/36 (11.11%)	0.015
<i>CMYA5</i>	4/7 (57.14%)	4/36 (11.11%)	0.015
<i>ATG2A</i>	3/7 (42.86%)	2/36 (5.56%)	0.024
<i>CNTNAP3B</i>	3/7 (42.86%)	2/36 (5.56%)	0.024
<i>EXD3</i>	3/7 (42.86%)	2/36 (5.56%)	0.024
<i>NBPF15</i>	3/7 (42.86%)	2/36 (5.56%)	0.024
<i>PKD1</i>	3/7 (42.86%)	2/36 (5.56%)	0.024
<i>SAMD11</i>	3/7 (42.86%)	2/36 (5.56%)	0.024
<i>WDR87</i>	3/7 (42.86%)	2/36 (5.56%)	0.024
<i>GOLGA6L9</i>	5/7 (71.43%)	10/36 (27.78%)	0.040
<i>AKAP11</i>	3/7 (42.86%)	3/36 (8.33%)	0.045
<i>CFAP54</i>	3/7 (42.86%)	3/36 (8.33%)	0.045
<i>EML6</i>	3/7 (42.86%)	3/36 (8.33%)	0.045
<i>PTPN13</i>	3/7 (42.86%)	3/36 (8.33%)	0.045
<i>TEX15</i>	3/7 (42.86%)	3/36 (8.33%)	0.045
Genes	Syndromic feature		p-value
	Yes (N:10)	No (N:33)	
<i>PRSS2</i>	7/10 (70.00%)	6/33 (18.18%)	0.004
<i>PRSS1</i>	7/10 (70.00%)	7/33 (21.21%)	0.007
<i>ATG14</i>	4/10 (40.00%)	1/33 (3.03%)	0.007
<i>CEP170B</i>	4/10 (40.00%)	1/33 (3.03%)	0.007
<i>AKR7A3</i>	3/10 (30.00%)	0/33 (0.00%)	0.010
<i>ARID1A</i>	3/10 (30.00%)	0/33 (0.00%)	0.010
<i>C20orf144</i>	3/10 (30.00%)	0/33 (0.00%)	0.010

<i>DENND1C</i>	3/10 (30.00%)	0/33 (0.00%)	0.010
<i>FAM107A</i>	3/10 (30.00%)	0/33 (0.00%)	0.010
<i>GAA</i>	3/10 (30.00%)	0/33 (0.00%)	0.010
<i>METTL14</i>	3/10 (30.00%)	0/33 (0.00%)	0.010
<i>PAMR1</i>	3/10 (30.00%)	0/33 (0.00%)	0.010
<i>TNIK</i>	3/10 (30.00%)	0/33 (0.00%)	0.010
<i>ACSM2A</i>	4/10 (40.00%)	2/33 (6.06%)	0.020
<i>AKNA</i>	4/10 (40.00%)	2/33 (6.06%)	0.020
<i>NBPF4</i>	4/10 (40.00%)	2/33 (6.06%)	0.020
<i>ABCC12</i>	3/10 (30.00%)	1/33 (3.03%)	0.034
<i>ATP10B</i>	3/10 (30.00%)	1/33 (3.03%)	0.034
<i>BRD8</i>	3/10 (30.00%)	1/33 (3.03%)	0.034
<i>CEP295</i>	3/10 (30.00%)	1/33 (3.03%)	0.034
<i>CES5A</i>	3/10 (30.00%)	1/33 (3.03%)	0.034
<i>CIT</i>	3/10 (30.00%)	1/33 (3.03%)	0.034
<i>CRYBG3</i>	3/10 (30.00%)	1/33 (3.03%)	0.034
<i>DAG1</i>	3/10 (30.00%)	1/33 (3.03%)	0.034
<i>DAZAP2</i>	3/10 (30.00%)	1/33 (3.03%)	0.034
<i>FAM214B</i>	3/10 (30.00%)	1/33 (3.03%)	0.034
<i>GAK</i>	3/10 (30.00%)	1/33 (3.03%)	0.034
<i>IFNL1</i>	3/10 (30.00%)	1/33 (3.03%)	0.034
<i>MYH15</i>	3/10 (30.00%)	1/33 (3.03%)	0.034
<i>MYH4</i>	3/10 (30.00%)	1/33 (3.03%)	0.034
<i>MYH7B</i>	3/10 (30.00%)	1/33 (3.03%)	0.034
<i>NUP188</i>	3/10 (30.00%)	1/33 (3.03%)	0.034
<i>SUN1</i>	3/10 (30.00%)	1/33 (3.03%)	0.034
<i>SVEP1</i>	3/10 (30.00%)	1/33 (3.03%)	0.034
<i>SYN3</i>	3/10 (30.00%)	1/33 (3.03%)	0.034
<i>KRTAP5-7</i>	8/10 (80.00%)	13/33 (39.39%)	0.034
<i>CHD8</i>	4/10 (40.00%)	3/33 (9.09%)	0.040
<i>PCDHB14</i>	4/10 (40.00%)	3/33 (9.09%)	0.040
Genes	Laterality		p-value
	Bilateral (N:5)	Unilateral (N:38)	
<i>AKR7A3</i>	3/5 (60.00%)	0/38 (0.00%)	0.001
<i>ARID1A</i>	3/5 (60.00%)	0/38 (0.00%)	0.001

<i>METTL14</i>	3/5 (60.00%)	0/38 (0.00%)	0.001
<i>BRD8</i>	3/5 (60.00%)	1/38 (2.63%)	0.003
<i>ZNF683</i>	3/5 (60.00%)	2/38 (5.26%)	0.008
<i>PRSS2</i>	4/5 (80.00%)	9/38 (23.68%)	0.023
<i>BTBD7</i>	3/5 (60.00%)	4/38 (10.53%)	0.024
<i>CHD8</i>	3/5 (60.00%)	4/38 (10.53%)	0.024
<i>PRSS1</i>	4/5 (80.00%)	10/38 (26.32%)	0.032
<i>GLOD4</i>	3/5 (60.00%)	5/38 (13.16%)	0.037