

Cartilage Repair after Opening-wedge High Tibial Osteotomy with Autologous Osteochondral Transplantation for Spontaneous Osteonecrosis of the Knee and Osteoarthritis

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COI disclosure

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The author have no financial conflicts of interest to disclose concerning this presentation.

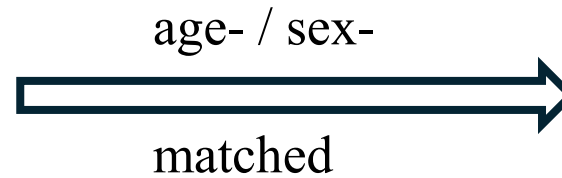
Purpose

**Compare the Cartilage Repair
after Opening-wedge High Tibial Osteotomy(OWHTO)
with Autologous Osteochondral Transplantation(AOT)
for Spontaneous Osteonecrosis of the Knee(SONK)
and Medial Knee Osteoarthritis (OA)**

Materials and Methods

2006 ~ 2018 OWHTO w/ AOT

OA	146
SONK	33



OA	26
SONK	26

M : F 13 : 13
Age 67.7 y.o.

Cartilage Repair Assessment Score @ 2nd look

Av.16.8m

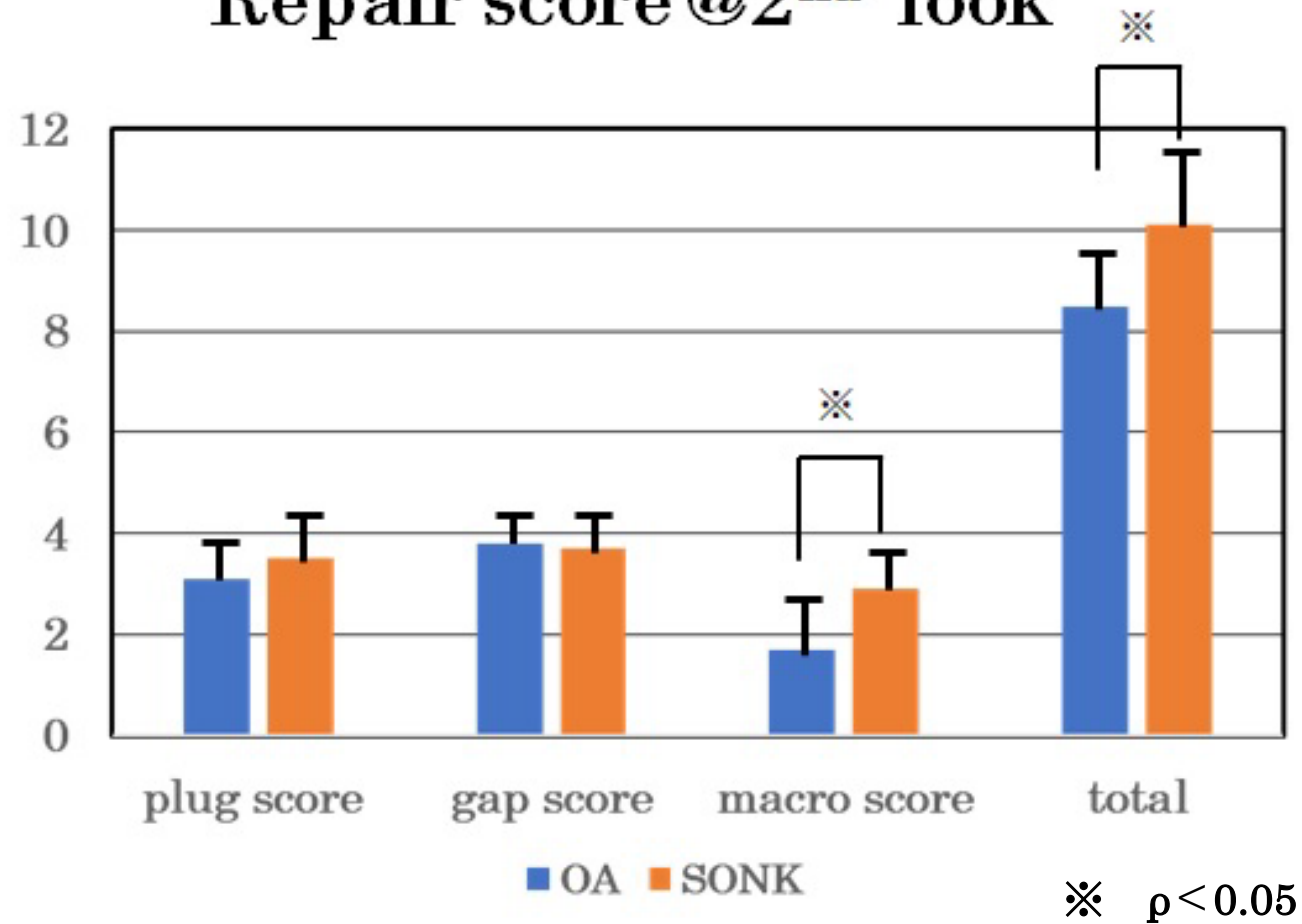
		SONK (n = 26)	OA (n = 26)	<i>P</i> value	
Lesion size	(mm ²)	482 ± 185	536 ± 152	0.317	※
No. of transplanted plugs		3.3 ± 0.9	3.0 ± 0.3	0.221	※
Coverage ratio	(%)	44.9 ± 14.0	38.0 ± 13.8	0.113	※
Post-op %MA	(%)	61.5 ± 11.2	59.5 ± 15.5	0.432	※

		<u>SONK</u>		<u>OA</u>	
		Pre	FU	Pre	FU
OA grade	KL2	2	12	1	1
	KL3	13	12	6	20
	KL4	11	2	19	5
		0.084※		0.0039 ※	

Post–ope. OA Grade is significantly better in SONK

※ Wilcoxon-signed rank test

Repair score @2nd look



Only Macroscopic Appearance is significantly different.

Repair grade @ 2nd look

	OA	SONK
normal (12)	0	1
nearly normal (8 ~ 12)	17	23
abnormal (5~8)	9	2
severely abnormal (< 5)	0	0

**Cartilage Repair Grade @2nd look
is significantly better in SONK**

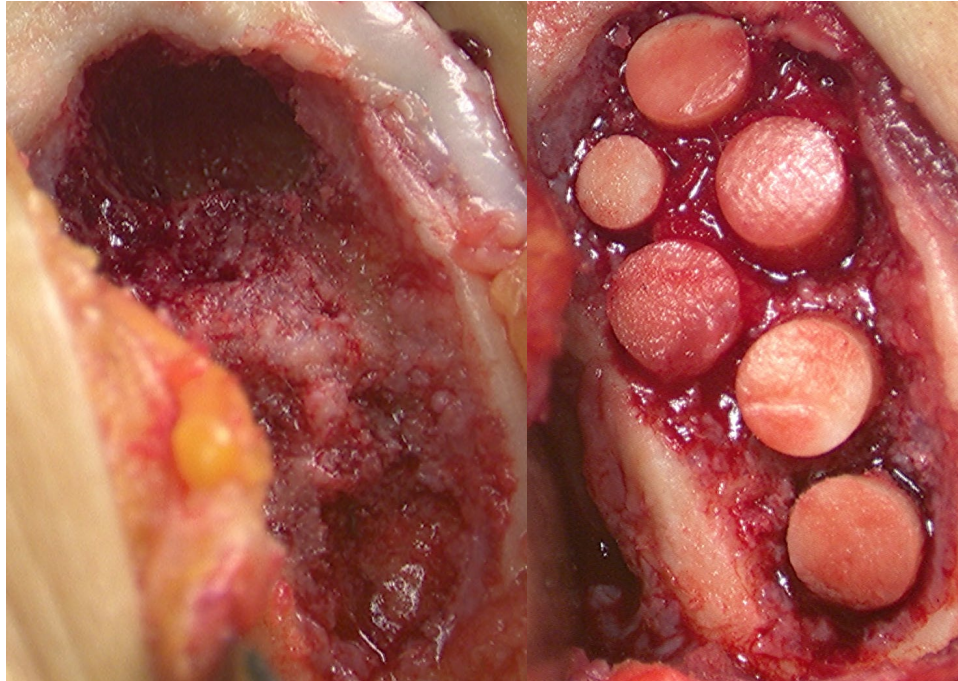
Single variance analysis of total repair score

		<i>t</i>	<i>P</i>	F
OA	Age	-0.5253	0.604	0.276
	Sex	1.9442	0.064	3.780
	BMI	-0.1689	0.867	0.029
	Lesion size	-2.1591	0.041※	4.662
	Post OA grade	0.3137	0.757	0.098
SONK	Age	1.2826	0.212	1.645
	Sex	-0.4863	0.631	0.236
	BMI	-0.7127	0.483	0.508
	Lesion size	-1.2252	0.232	1.501
	Post OA grade	-5.0321	0.000※	25.32

**Factor
affecting
Cartilage
Repair**

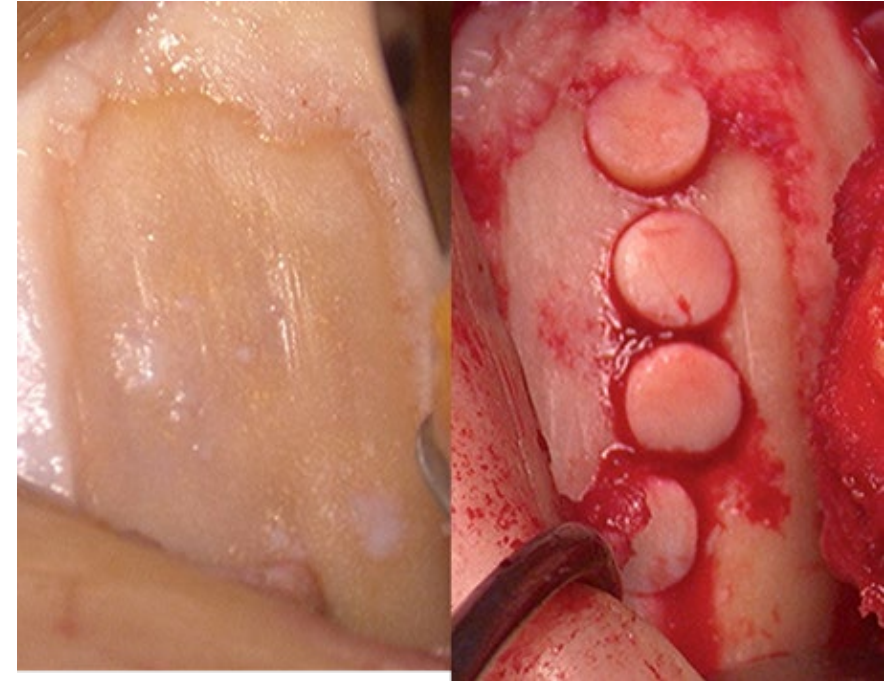
Discussion

SONK



Osteochondral Defect

OA

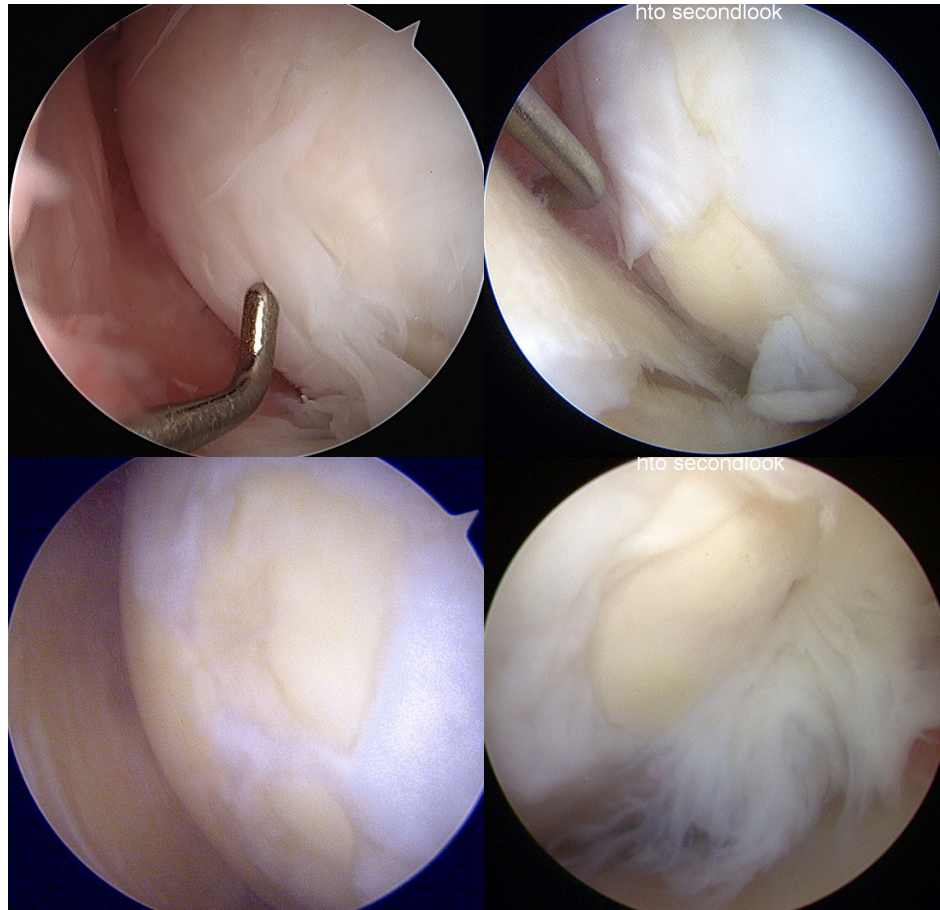


Flat Eburnated Surface

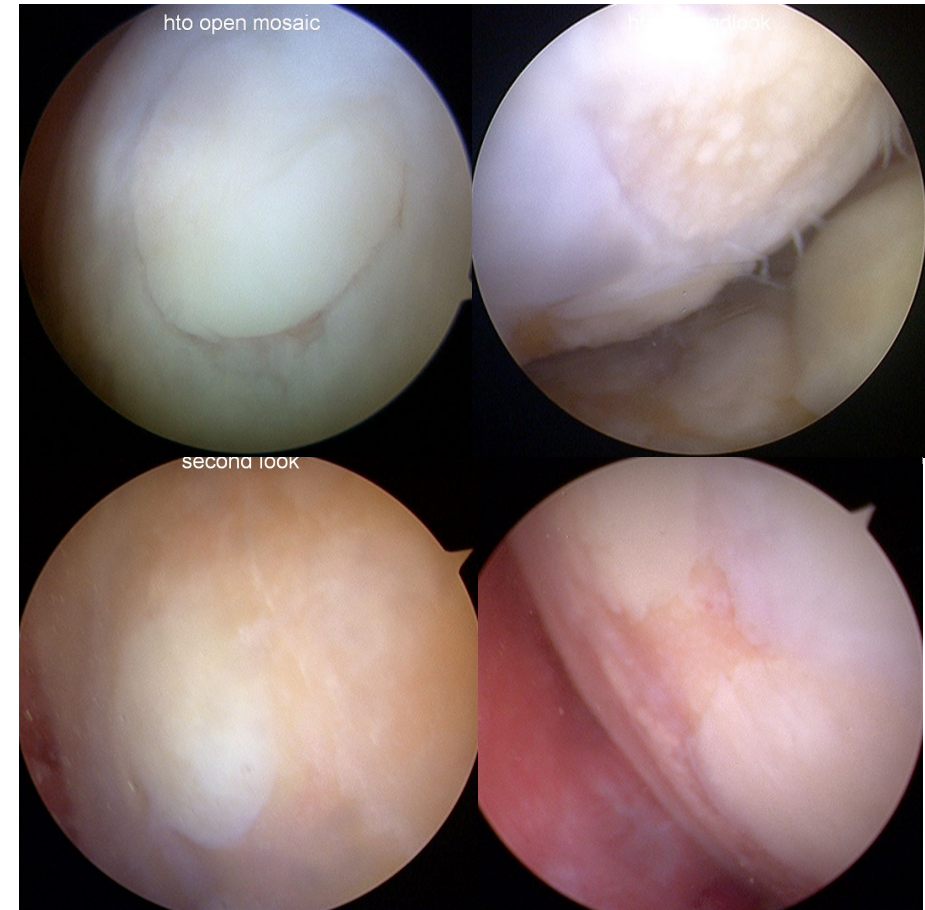
Difference in Lesion Shape

Appearance of Implanted Plugs @2nd look

SONK



OA



Degree of Fibrocartilage Coverage is different

Difference of Fibrocartilage Coverage **between SONK and OA**



More Space around Plugs

Cell Supply form Cancellous Bone



Mega Allograft may solve these problems.

Conclusion

**Conditions for Good Results in Cartilage Repair
after OWHTO w/ AOT for SONK and OA**

Lesion Size

Space for Fibrocartilage Growth around the Plugs

Cell Supply from Cancellous Bone

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