The possible role of cell polarity for cancer disease - the implication of cancer regression by human body axes interaction and an active cancer prevention for a basic solution for cancer diseases

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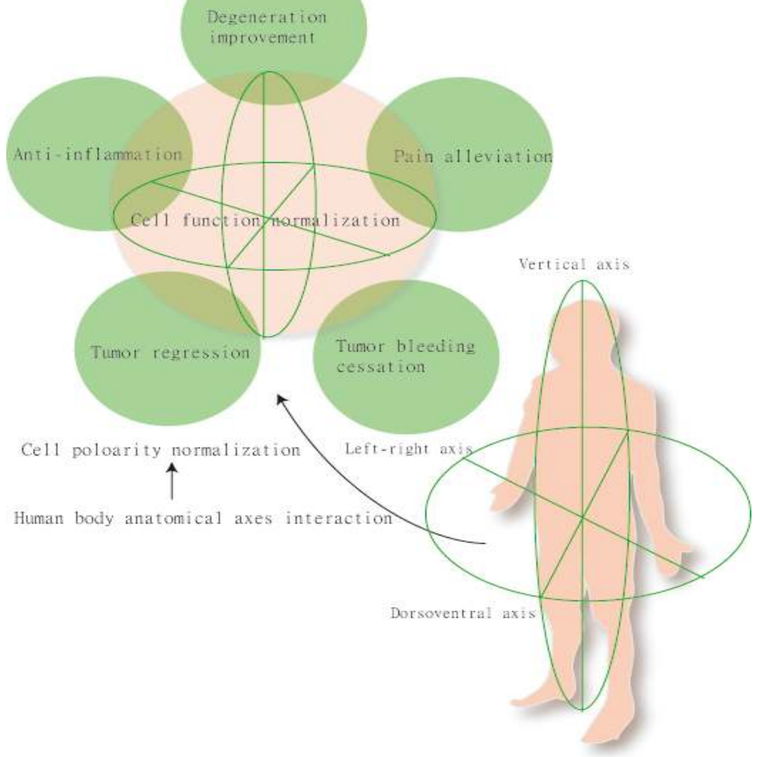
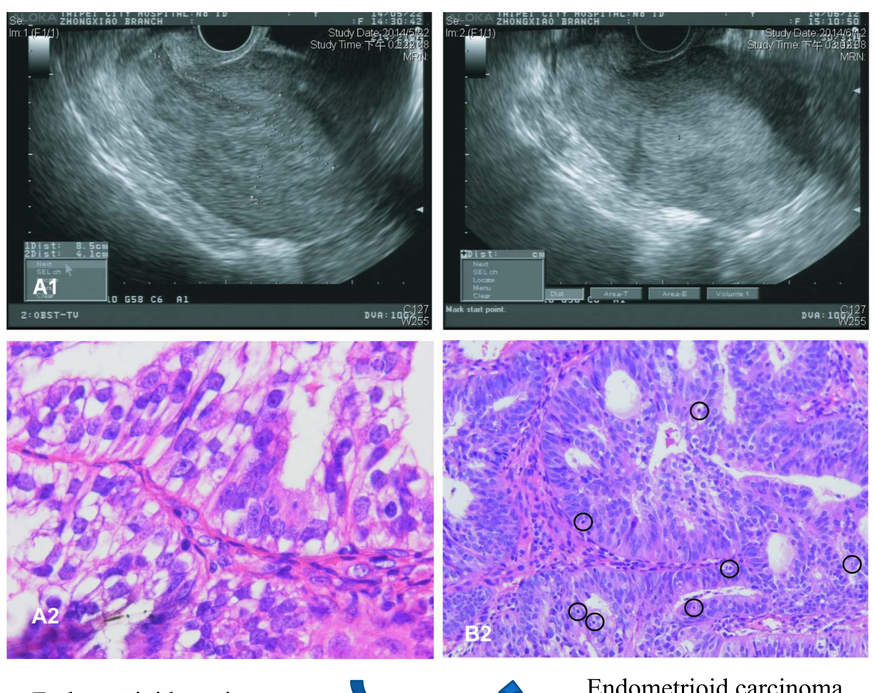
Ou MC decrescnedo phenomenon (OuDP) is induced by interaction among human body anatomical axes. Measurable effect of pain relief, tumor growth suppression, organ function improvement, inflammation reduction by OuDP indicate tissue function normalization.
OuDP is imperceptible in the past for it might obscure as a negligible trifle. However, few people could associate a falling-down apple with gravity in the old past. (Am J Emerg Med 2012, Proc Physiol Soc, 2014, AACR2016)

Evidences of Interaction of anatomical axes associated with cell polarity:

1. **The signaling system of embryonic axes imparts polarization of individual cells in Drosophila.**
2. **3D system shows to suppress cancer cells while 2D system does not.**
3. **Anatomical axis-associated genes expression is related to carcinogenesis and development.**
4. **Interaction of human anatomical axes can cause cell function normalisaiton, which indicates normalization of cell polarity.**
5. **OuDP along the 3D human body axes system suppressed neoplasm more efficiently than OuDPt along the 2D body axes system.**



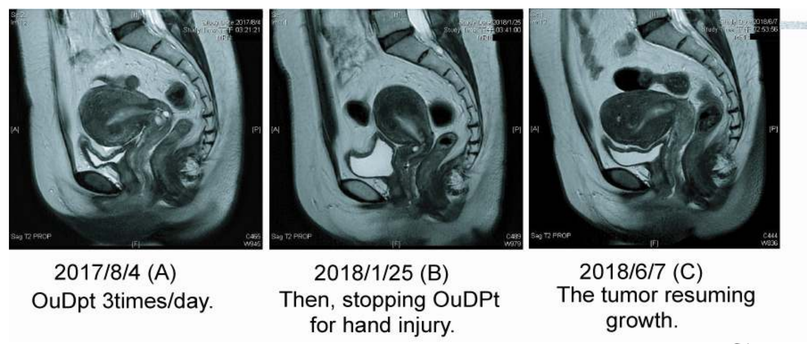
OuDP treatment (OuDPt) induces cancer cells apoptosis which can result in tumor regression.



Endometrioid carcinoma 2014/5/25 → OuDPt → Endometrioid carcinoma with apoptosis 2014/6/12

OuDPt for endometrial cancer showed reducing the tumor size, which indicates a tissue function normalizeion. (IJGC 2018; 28(Spp2): 492), Cancer archives 2019; 1:1-3)

Figure 1. Result of Ou MC decrescendo phenomenon treatment for stage II uterine endometrioid adenocarcinoma of case 9 (table 1).



2017/8/4 (A) OuDpt 3times/day. 2018/1/25 (B) Then, stopping OuDPt for hand injury. 2018/6/7 (C) The tumor resuming growth.

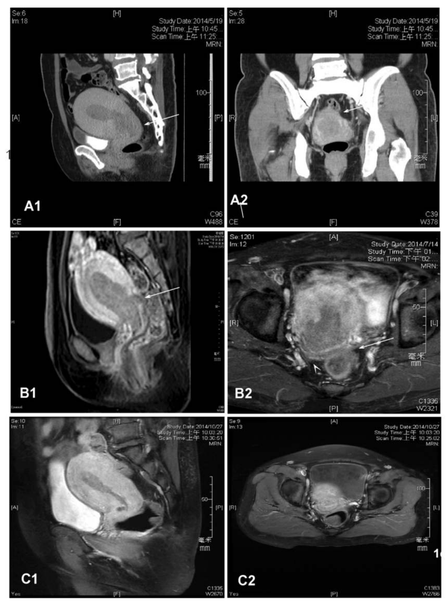


Figure. 2 Uterine endometrioid carcinoma stage IIIB of case 2 regressed to stage IB (fig.1), but later resumed growth and then shrunk again following 3D OuDPt. However, the tumor eventually resumed growth again despite the 3D OuDPt.

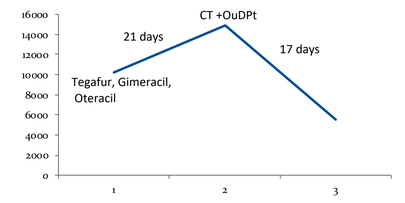


Figure. 3 Case 10 was a stage III pancreatic adenocarcinoma. The CA199 levels of case 10 increased from 10,200 U/ml to 14,900 U/ml despite chemotherapy with weekly gemcitabine and daily TS-1 (a combination of tegafur, gimeracil and oteracil) for 3 weeks, and then decreased to 5,534 U/ml after adding 2D OuDPt

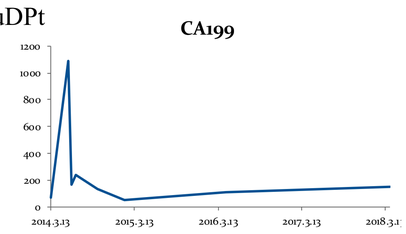


Figure 4. Case 3 with suspected pancreatic cancer showed complete tumor regression with 2 years OuDPt. However, main pancreatic duct showed 0.4 cm in diameter (0.14 cm, after 5 months intensive OuDPt in 2014 and CA199 showed about 151.2 (unit/ml) on April 2, 2018, which might indicate the suspected cancer was not cured.

Table 1.

Case	Cancer	Age/Sex	Stage	Concomitant treatment	Treatment duration	Short term effect	Long term effect
1	Uterine leiomyosarcoma	59/F	IB	Nil	1 month	Stop uterine bleeding	n.a.
2[a]	Endometrial cancer[a]	49/F	IIIB	Nil	4 years	Stop utriene bleeding Regression	Progression
3[a]	Suspected pancreatic cancer	51/F	IA	Nil	5 years	Regression	No recurrence
4	Suspected skin metastasis of CML	39/F	Chronic phase	Chemotherapy	4 weeks	Regression	n.a.
5[a]	Ovarian cancer	56/F	IVA	Nil	2 years	Regression	Progression
6	Uterine endometrial cancer	53/F	IA	Nil	2 months	Stop uterine bleeding	n.a.
7	Breast cancer	74/F	IIB	Nil	3 weeks	Regression	n.a.
8	Pancreatic cancer	63/M	III	n.a.	1 month	Regression	n.a.
9[a]	Uterine endometrial cancer	50/F	II	Nil	8 months	Regression	Progression[b]
10	Pancreatic cancer	69/M	III	Chemotherapy	2 weeks	Regression[c]	n.a.

[a] Case 2, 3,5, 9 were long-term follow up . [b] After tumour regression, OuDPt was seldom performed, and an MRI scan 5 months later showed the tumour had resumed growth. [c]CA199 decreased from 14,900 U/ml to 5,534 U/ml after combined with OuDPt.

Discussion:
Disruption of cell polarity makes cancer cells lose their ability to behave normally in response to physiological cues and is frequently assumed to be a common feature of cancer progression. However, if cancer cell polarity can be normalised or reinforced, it may also normalise the function of these mutant cells. When the functions of tumour tissues are normalised, tumour cells may conform to apoptotic regulation, growth suppression, and metastasis suppression, processes which normal cells undergo. The normalisation of tumour tissue function may involve not only tumour cells but also the microenvironment in which the tumour cells are located, which is related to metastasis, uninhibited proliferation, angiogenesis, and abnormal cells elimination. Thus, cell polarity is not only a result of cancer developmnet but also a cause for genesis and develoment of cancer.
Long term follow up of advanced cancer diseases treated with OuDP showed tumor regrowth after initial regression, which may be due to poor accessibility, insufficient therapeutic efficacy or escape phenomenon. OuDPt may possibly cause tumour bleeding or exfoliation, which can cause metastasis. Compression of tumour may also cause tumour bleeding or rupture.
However, OuDPt shows a suppressive effect on tumour growth, which may prevent cancer occurrence or even cure early stage cancers. Because OuDPt is easy to perform and can be done by patients themselves, OuDPt can be availed as a low cost active cancer prevention method. Nonetheless, further study is warranted.